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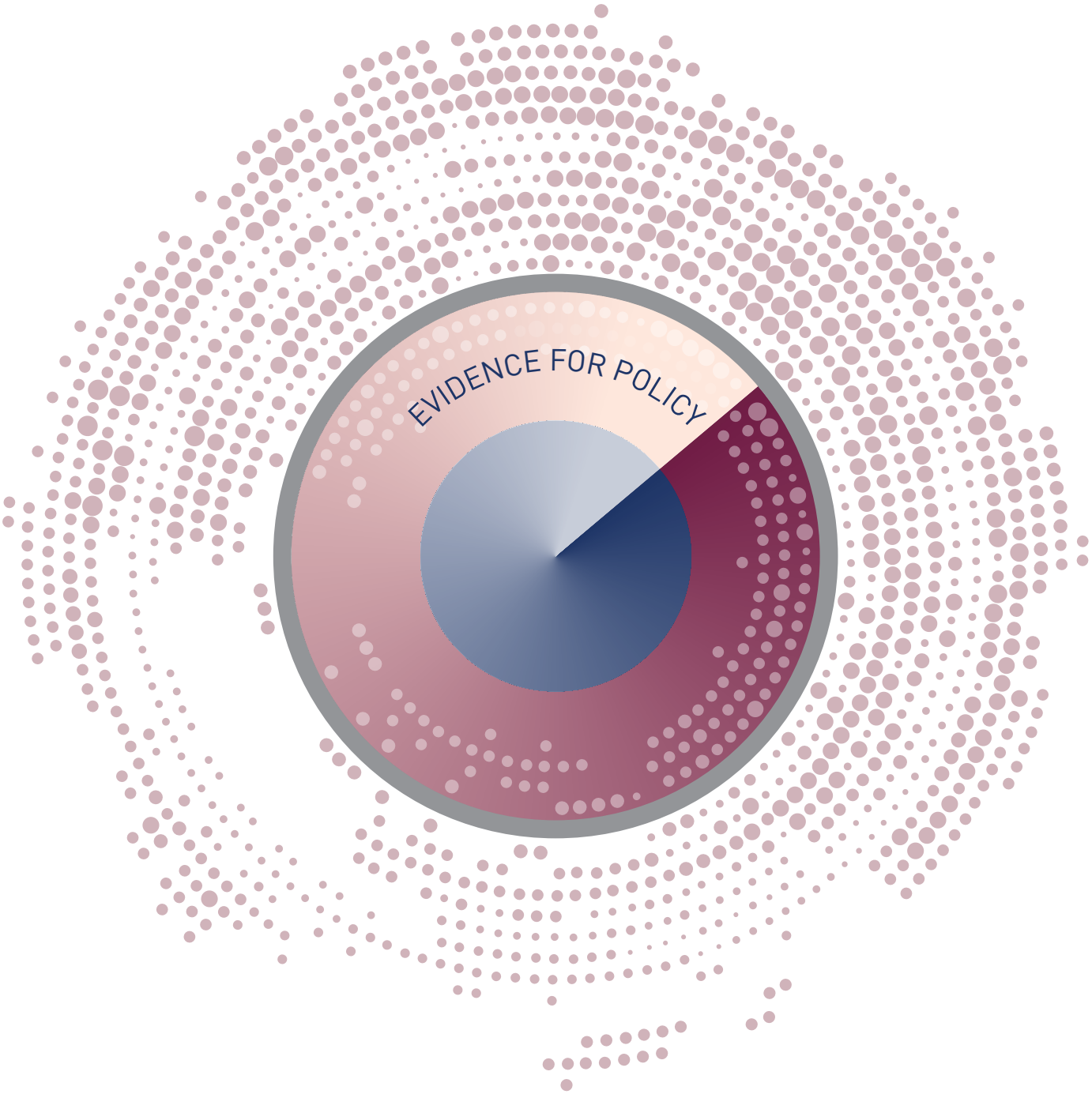
QUARTERLY ECONOMIC COMMENTARY

SPRING 2018

KIERAN MCQUINN, CONOR O'TOOLE, PHILIP ECONOMIDES AND TERESA MONTEIRO



ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

QUARTERLY ECONOMIC COMMENTARY

Kieran McQuinn
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Spring 2018

The forecasts in this *Commentary* are based on data available by 15 March 2018

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Special Articles are published in the *QEC* in order to foster high-quality debate on various aspects of the Irish economy and Irish economic policy. They are subject to refereeing prior to publication.

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	2015	2016	2017	2018	2019
Output (Real Annual Growth %)					
Private Consumer Expenditure	4.2	3.3	1.9	2.4	2.5
Public Net Current Expenditure	1.8	5.3	1.8	2.5	3.0
Investment	27.9	61.2	-22.3	12.6	13.3
Exports	38.4	4.6	6.9	7.4	7.8
Imports	26.0	16.4	-6.2	9.7	11.0
Gross Domestic Product (GDP)	25.6	5.1	7.8	4.8	3.9
Gross National Product (GNP)	16.4	9.6	5.2	4.7	3.9
Prices (Annual Growth %)					
Consumer Price Index (CPI)	-0.3	0.0	0.4	0.7	1.1
Growth in Average Hourly Earnings	1.4	1.7	2.1	2.5	3.5
Labour Market					
Employment Levels (ILO basis ('000))	2,058	2,133	2,195	2,254	2,298
Unemployment Levels (ILO basis ('000))	226	195	158	129	108
Unemployment Rate (as % of Labour Force)	10.0	8.4	6.7	5.4	4.5
Public Finance					
General Government Balance (€bn)	-5.0	-1.8	-0.8	0.5	1.8
General Government Balance (% of GDP)	-1.9	-0.7	-0.3	0.2	0.6
General Government Debt (% of GDP)	76.9	72.8	70.9	68.0	64.2
External Trade					
Balance of Payments Current Account (€bn)	28.6	9.2	37.1	29.4	23.7
Current Account (% of GNP)	13.9	4.1	15.4	11.6	8.9

Note: Detailed forecast tables are contained in an Appendix to this *Commentary.*

NATIONAL ACCOUNTS 2017

A: EXPENDITURE ON GROSS NATIONAL PRODUCT

	2016	2017	Change in 2017		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	96.6	99.7	3.2	1.3	1.9
Public Net Current Expenditure	28.4	29.5	4.2	-2.3	1.8
Gross Fixed Capital Formation	87.7	69.5	-20.8	2.0	-22.3
Exports of Goods and Services	335.0	355.6	6.1	-0.7	6.9
Physical Changes in Stocks	2.4	2.0			
Final Demand	**550.1**	**556.3**	**1.1**	**0.1**	**1.0**
less:					
Imports of Goods and Services	274.4	260.1	-5.2	1.1	-6.2
Statistical Discrepancy	-0.1	-0.1			
GDP at Market Prices	**275.6**	**296.1**	**7.5**	**-0.4**	**7.8**
Net Factor Payments	-48.8	-54.9			
GNP at Market Prices	**226.7**	**241.2**	**6.4**	**1.1**	**5.2**

B: GROSS NATIONAL PRODUCT BY ORIGIN

	2016	2017	Change in 2017	
	€ bn	€ bn	€ bn	%
Agriculture	3.2	3.3	0.1	2.0
Non-Agriculture: Wages, etc.	80.3	84.4	4.2	5.2
Other	107.4	117.6	10.1	9.4
Adjustments: Stock Appreciation	0.4	0.4		
Statistical Discrepancy	0.1	0.1		
Net Domestic Product	**191.4**	**205.8**	**14.4**	**7.5**
Net Factor Payments	-48.8	-54.9	-6.1	12.5
National Income	**142.6**	**150.9**	**8.3**	**5.8**
Depreciation	64.5	69.4	5.0	7.8
GNP at Factor Cost	**207.0**	**220.3**	**13.3**	**6.4**
Taxes less Subsidies	19.7	20.9	1.2	5.9
GNP at Market Prices	**226.7**	**241.2**	**14.4**	**6.4**

C: BALANCE OF PAYMENTS ON CURRENT ACCOUNT

	2016	2017	Change in 2017
	€ bn	€ bn	€ bn
X – M	60.8	95.2	34.5
F	-47.6	-53.8	-6.1
Net Transfers	-3.8	-4.3	-0.5
Balance on Current Account	**9.2**	**37.1**	**27.9**
as % of GNP	4.1	15.4	11.6

NATIONAL ACCOUNTS 2018

A: EXPENDITURE ON GROSS NATIONAL PRODUCT

	2017	2018	Change in 2018		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	99.7	103.1	3.4	1.0	2.4
Public Net Current Expenditure	29.5	30.6	3.5	1.0	2.5
Gross Fixed Capital Formation	69.5	80.4	15.7	2.8	12.6
Exports of Goods and Services	355.6	385.8	8.5	1.0	7.4
Physical Changes in Stocks	2.0	3.0			
Final Demand	**556.3**	**603.0**	**8.4**	**1.2**	**7.1**
less:					
Imports of Goods and Services	260.1	294.9	13.4	3.4	9.7
Statistical Discrepancy	-0.1	-0.1			
GDP at Market Prices	**296.1**	**308.0**	**4.0**	**-0.7**	**4.8**
Net Factor Payments	-54.9	-57.7			
GNP at Market Prices	**241.2**	**250.3**	**3.8**	**-0.9**	**4.7**

B: GROSS NATIONAL PRODUCT BY ORIGIN

	2017	2018	Change in 2018	
	€ bn	€ bn	€ bn	%
Agriculture	3.3	3.4	0.1	2.5
Non-Agriculture: Wages, etc.	84.4	88.9	4.5	5.3
Other	117.6	120.6	3.0	2.5
Adjustments: Stock Appreciation	0.4	0.4		
Statistical Discrepancy	0.1	0.1		
Net Domestic Product	**205.8**	**213.3**	**7.5**	**3.7**
Net Factor Payments	-54.9	-57.7	-2.8	5.1
National Income	**150.9**	**155.6**	**4.8**	**3.2**
Depreciation	69.5	73.1	3.6	5.2
GNP at Factor Cost	**220.3**	**228.7**	**8.4**	**3.8**
Taxes less Subsidies	20.9	21.6	0.7	3.4
GNP at Market Prices	**241.2**	**250.3**	**9.1**	**3.8**

C: BALANCE OF PAYMENTS ON CURRENT ACCOUNT

	2017	2018	Change in 2018
	€ bn	€ bn	€ bn
X – M	95.2	90.7	-4.5
F	-53.8	-56.5	-2.7
Net Transfers	-4.3	-4.8	-0.5
Balance on Current Account	**37.1**	**29.4**	**-7.7**
as % of GNP	15.4	11.7	-3.1

NATIONAL ACCOUNTS 2019

A: EXPENDITURE ON GROSS NATIONAL PRODUCT

	2018	2019	Change in 2019		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	103.1	106.8	3.5	1.0	2.5
Public Net Current Expenditure	30.6	31.8	4.1	1.0	3.0
Gross Fixed Capital Formation	80.4	93.4	16.2	2.6	13.3
Exports of Goods and Services	385.8	423.5	9.8	1.8	7.8
Physical Changes in Stocks	3.0	3.0			
Final Demand	**603.0**	**658.5**	**9.2**	**1.8**	**7.3**
less:					
Imports of Goods and Services	294.4	335.4	13.7	2.4	11.0
Statistical Discrepancy	-0.1	-0.1			
GDP at Market Prices	**308.1**	**323.0**	**4.9**	**0.9**	**4.8**
Net Factor Payments	-57.7	-60.0			
GNP at Market Prices	**250.3**	**263.1**	**5.1**	**1.2**	**4.7**

B: GROSS NATIONAL PRODUCT BY ORIGIN

	2018	2019	Change in 2019	
	€ bn	€ bn	€ bn	%
Agriculture	3.4	3.4	0.0	1.4
Non-Agriculture: Wages, etc.	88.9	93.7	4.8	5.4
Other	120.6	126.4	5.9	4.9
Adjustments: Stock Appreciation	0.4	0.4		
Statistical Discrepancy	0.1	0.1		
Net Domestic Product	**213.3**	**224.0**	**10.7**	**5.0**
Net Factor Payments	-57.7	-60.0	-2.3	3.9
National Income	**155.6**	**164.1**	**8.4**	**5.4**
Depreciation	73.1	76.7	3.6	4.9
GNP at Factor Cost	**228.7**	**240.7**	**12.0**	**5.3**
Taxes less Subsidies	21.6	22.3	0.8	3.5
GNP at Market Prices	**250.3**	**263.1**	**12.8**	**5.1**

C: BALANCE OF PAYMENTS ON CURRENT ACCOUNT

	2018	2019	Change in 2019
	€ bn	€ bn	€ bn
X – M	90.7	87.8	-2.9
F	-56.5	-58.7	-2.2
Net Transfers	-4.8	-5.3	-0.5
Balance on Current Account	**29.4**	**23.7**	**-5.6**
as % of GNP	11.7	9.0	-2.1

The Irish Economy – Forecast Overview

Initial official estimates indicate that the Irish economy grew by 7.8 per cent in 2017. Preliminary data for 2018 indicate that the economy looks set to experience further expansion in the present year. Strong domestic sources of growth along with improving international conditions lead to an expected growth rate of 4.8 per cent in 2018. We also expect that these components will result in growth of approximately 3.9 per cent in 2019. In preparing forecasts for 2019, we assume that a European Economic Agreement (EEA) will exist between the UK and the EU.

Assessing the continued strong performance of the Irish economy is still bedevilled by difficulties with the National Accounts. Estimates of overall output growth as well as some of the major components of growth, investment and the terms of trade, are influenced by large transactions of a select number of firms. While there are ongoing efforts to provide additional indicators of economic activity, it is now apparent that a more comprehensive approach to the preparation of the National Accounts is required. As well as the standard set of indicators, a parallel set of accounts which are not impacted by these large transactions should also be prepared. Such accounts should be available on both the output and the expenditure side.

From a policy perspective, this becomes all the more pressing given the persistently strong rates of growth experienced in recent years, thereby giving rise to the possibility of overheating in the domestic economy. It is almost impossible to derive accurate estimates of sustainable economic growth based on the current set of National Accounts. Given the large amount of public investment proposed in the recent national development plan, it is imperative that reliable estimates of sustainable economic growth are available so that policymakers can accurately gauge when the economy is encountering capacity constraints.

The ongoing uncertainty concerning the UK Government's stance on remaining in the EU Single Market and Customs Union is of particular relevance to the Irish economy. The implications for domestic consumer prices of new tariffs between the UK and Irish economy are examined in a Special Article to the *Commentary*. Lawless and Morgenroth examine the contribution of UK imports to overall household expenditure in Ireland and their exposure to tariffs and other cost increases from possible restrictions on trade. They estimate that the imposition of such tariffs could increase the annual cost of the typical consumption basket

for the average household between €892 (increase in non-tariff trade costs) and €1,360 (tariffs plus other trade cost increases). Along with the estimated impact of a hard Brexit on Irish fiscal space in Garcia (2017),[1] this represents another tangible example of how a hard Brexit would impact the domestic economy.

[1] Garcia Rodriguez, A., 2017. 'The Impact of Public Investment', *Quarterly Economic Commentary*, Autumn 2017, Economic and Social Research Institute (ESRI).

The International Economy

Forecasts for the international economy have been recently revised upwards in light of robust, well-distributed global growth. Contributing factors towards this improved outlook include the strong performance among major nations such as Germany, Spain, Canada and China.[2] This, coupled with newly passed US tax policy adjustments, has resulted in IMF projections for global growth in 2017 rising by 0.1 percentage points to 3.7 per cent. Global growth is expected to accelerate to 3.9 per cent in 2018 and 2019.

The Eurozone maintains its improving performance as record-low interest rates look likely to be maintained in the short run. The combined effects of prolonged accommodative monetary policy, strong labour market performance and robust consumer sentiment are important components of current growth and look likely to persist over the short to medium term. While all of these factors are indicative of a recovering economy, the annualised inflation rate for the Euro Area remains relatively muted at 1.3 per cent in January 2018. Gros (2018) addresses this issue in a recent CEPS report, suggesting inflation is largely under-estimated in the Euro Area relative to other economic regions. This is due to the Euro Area's exclusion of the cost of owner occupied housing, which is included in US statistics.[3] When housing is incorporated into inflation estimates, the Euro Area rate is closer to the 2 per cent inflation rate target. FocusEconomics estimates European GDP growth of 2.5 per cent for 2017 while unemployment should fall below double digits to 9.1 per cent. The improved Eurozone performance increases the probability that the ECB will begin to unwind exceptional monetary policy measures and increase the policy rate.

Gross Domestic Product in the UK is estimated by the Office of National Statistics (ONS) to have increased by 1.7 per cent in 2017 compared with growth of 1.9 per cent in 2016. In our previous *Commentary*, we considered in detail the UK and noted that declining UK productivity growth was evident even before the Brexit referendum had occurred. Recent data from the UK suggest moderate growth will occur in 2018, however continued uncertainty regarding the exact nature of Brexit still hangs over the medium-term outlook. Since the referendum in Q2 2016, the Sterling to Euro exchange rate has depreciated by 12.8 per cent, while there have been substantial levels of volatility in net investment; an immediate net outflow of funds in 2016 was followed by a significant inflow in 2017. The

2 IMF, *World Economic Outlook Updat*e, January 2018.

3 Gros, D., 2018. *Persistent low inflation in the Euro Area: Mismeasurement rather than a cause for concern?* CEPS, Centre for European Policy Studies, PE 614.214.

recent weakness of the Pound has resulted in the value of imports increasing significantly. This has resulted in UK inflation rates reaching 3 per cent, far above the Bank of England's target rate. The latest Bank of England commentaries suggests rates may increase faster than previously expected in order to counteract these forces. Consumption should thus remain subdued as real wages are likely to remain static. Compared with other advanced economies, the outlook for the UK economy seems to be the most precarious which is problematic for Ireland given our strong economic ties.

The short-term growth outlook for the US has improved significantly, largely due to the introduction of major expansionary fiscal policy measures. In 2017, the US economy grew by 2.3 per cent with unemployment rates falling by 0.5 percentage points to 4.4 per cent. Significant tax reductions and windfalls from tax holidays are expected to increase US growth in 2018. The temporary nature of the tax holiday may contribute towards increased Balance of Payment inflows on a short-term basis. Introducing these stimulative policy measures during the current stage of the business cycle does risk overheating the US economy. An element of overheating may have manifested itself through the higher than expected US inflation rate of 2.1 per cent in January. Recent comments from the new Chairman of the Federal Reserve suggest that the US economy may be facing a period of gradual interest rates increases.[4]

Elsewhere in January, the Bank of Japan maintained its policy of quantitative easing in order to reach 2.0 per cent inflation. Japan's trade outlook has improved given that the 11 remaining countries to the Trans-Pacific Partnership are expected to sign the deal in early March. Although growth rates improved to 1.7 per cent this year, the possibility of reduced labour supply threatens to slow further growth. For the first time in over two decades, unemployment fell to 2.8 per cent as of December 2017. The ratio of jobs to jobseekers rose for the month to 1.59:1 suggesting there are currently 159 openings for every 100 job seekers within the labour market. Improved labour market activity has not fed into wage growth with private consumption still weak as a result.

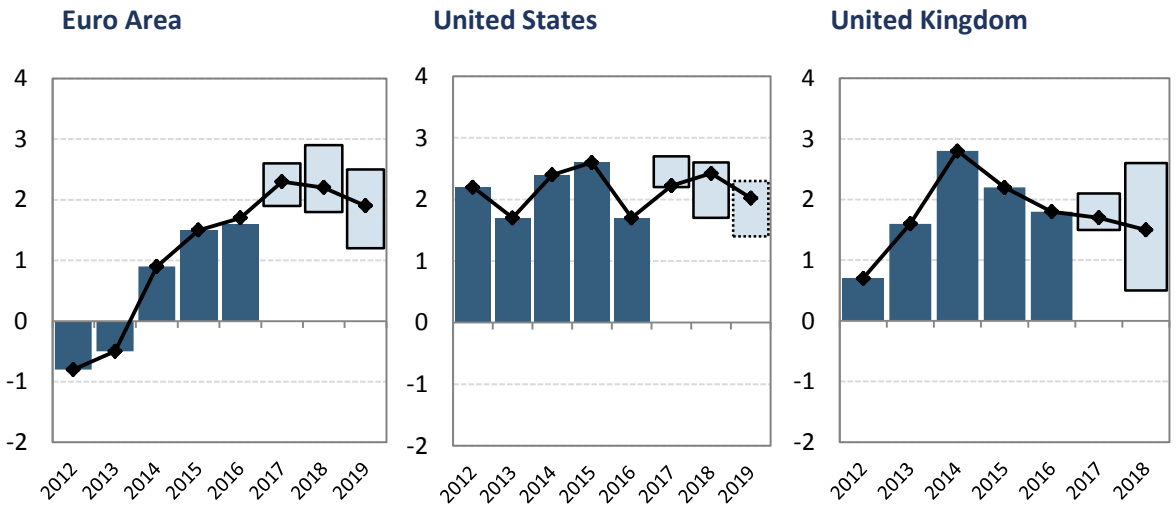
In 2017, China surpassed the government's GDP target of 6.5 per cent growth for the year by 0.3 percentage points. Investment growth has moderated as the Chinese government attempts to rebalance growth towards services from high-capital intensity industries and also tries to reduce industrial pollution. According to the National Bureau of Statistics of China, the services sector now dominates GDP contributions, outpacing manufacturing since 2015. The improved global

[4] Erosion of twin deficits would further weaken of the Dollar and could effectively place increased pressure upon financial market agents to sell out of such losses. There is a risk that a weakening Dollar combined with stimulus forcing an early form of monetary tightening could lead to a major correction in Dollar-based asset prices.

outlook has resulted in the Chinese economy moving above target GDP growth rates through improvements in trade. More generally, other developing countries have continued benefiting from improved global demand with global trade volumes expected to increase by 5.9 per cent for emerging market economies. According to revisions in the IMF's global outlook, Asian economies are particularly resurgent, averaging 4.7 per cent GDP growth for 2017. Latin American economies are expected to grow by 1.3 per cent, after contracting marginally by 0.7 per cent in 2016.

Figure 1 summarises the forecasts for GDP growth produced by the major institutions of their respective economies. The outlook overall continues to remain positive over the next two years, with the majority of experts adding upward revisions to forecasts for both the Euro Area and the United States. HM Treasury has not yet released forecasts for 2019, but between Oxford Economics, NIESR, IMF and OBR growth projections suggest an increase in 2019 of 1.8 per cent for the UK.

FIGURE 1 REAL GDP GROWTH (% CHANGE, YEAR-ON-YEAR)

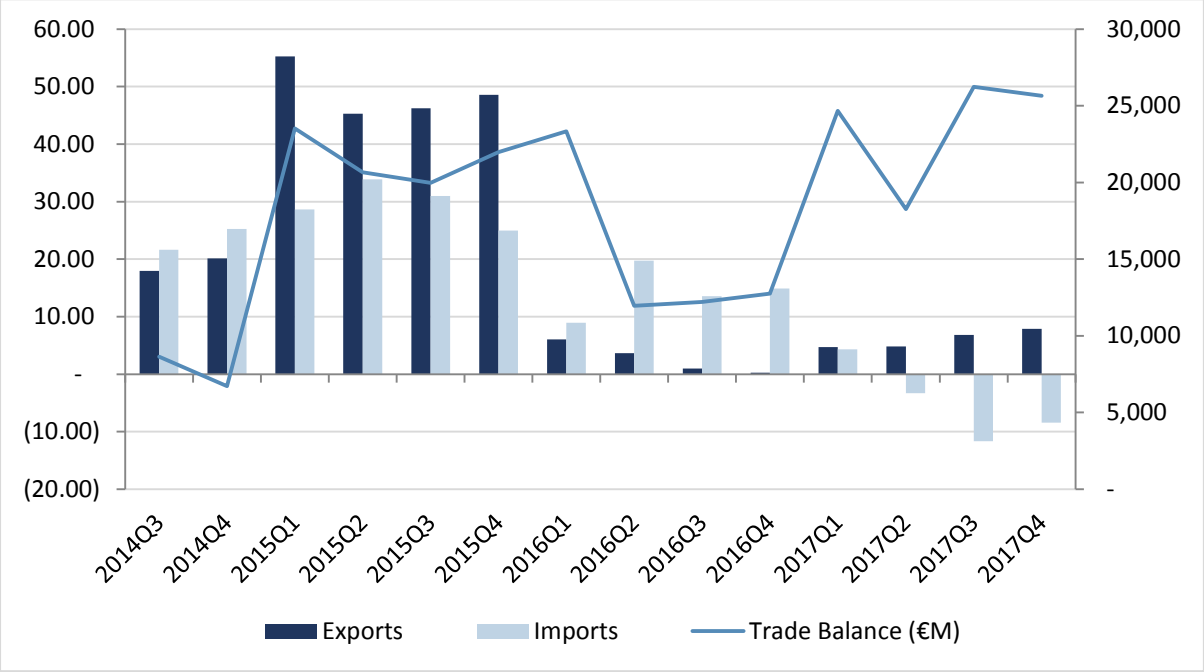


Sources: FocusEconomics, IMF, OECD, HM Treasury and Federal Reserve.

Implications for Irish Exports, Imports and the Balance of Payments

In 2017, the Irish economy registered a 7.8 per cent annual increase in GDP. This growth was heavily influenced by the volatile nature of Irish trade balances. In Figure 2, the most recent quarter's year-on-year growth rate of total Irish exports and imports reveal a 7.9 per cent increase in exports while imports fell dramatically by 8.4 per cent. Between 2016 and 2017, exports grew by 6.9 per cent while imports fell by 6.2 per cent.

FIGURE 2 ANNUAL GROWTH RATE (%) IN TOTAL IRISH EXPORTS AND IMPORTS



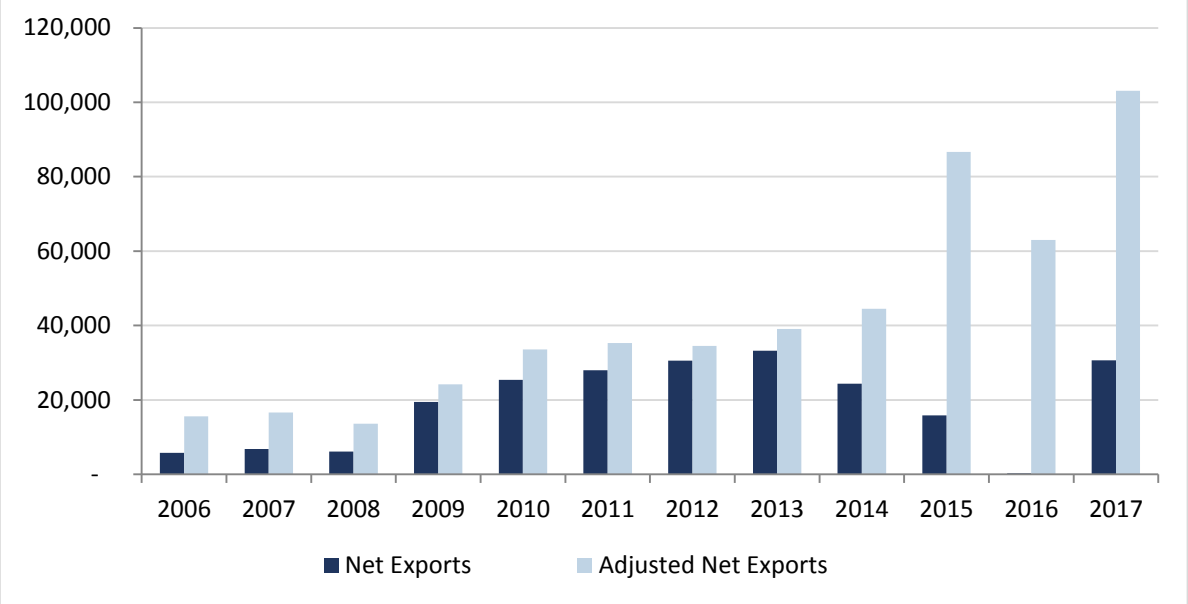
Source: Central Statistics Office.

As noted in our previous *Commentary*, a useful way to observe Irish trade is by splitting values into three categories; cross-border goods trade, ownership goods trade and services trade. Cross-border goods represent approximately 35 per cent of total Irish exports but this share has been declining in recent years. Services trade represents the largest portion of Irish exports at roughly 40-45 per cent. The remaining category, ownership goods, captures the exchange of goods outside of Ireland's borders that fall under Irish-resident firm ownership. This represented 8.3 per cent of total exports in 2013 before rising sharply to an average of 25 per cent over the last three years. The increase is mainly due to major multinational enterprises shifting certain functions to Ireland, resulting in manufacturing contracts being registered as Irish exports when these goods are both produced and sold abroad.

The increase in exports is not evenly distributed between these three categories of trade. Cross-border exports of goods, a useful measure of domestic trade activity, increased annually by 2.4 per cent in 2017. Services exports rose by 12.6 per cent, largely driven by increases in computer services which represent almost half of total services exports. Ownership trade, however, is estimated to have risen annually by 3.5 per cent, maintaining highly erratic annual growth rates per quarter ranging between -26.1 per cent and +32.2 per cent. Overall, the outlook for export growth remains quite volatile due to the nature of ownership trade.

Services represent over 60 per cent of total imports. Cross-border goods imports represent approximately 30 per cent of the total while ownership trade is far smaller under this measure at less than 10 per cent of total imports. A 6.9 per cent fall in services was the main factor behind the dramatic fall in Irish imports. Meanwhile, imported goods in 2017 rose annually by 3.7 per cent with respect to cross-border trade while ownership trade fell by an estimated 34.1 per cent. Declines in research and development as well as royalty/license fee payments were the major contributors towards service import declines. Figure 3 reveals net surpluses including adjustments for ownership trade. As of 2017, the growing influence of ownership trade significantly increases the headline figures for Ireland's current trade balance.

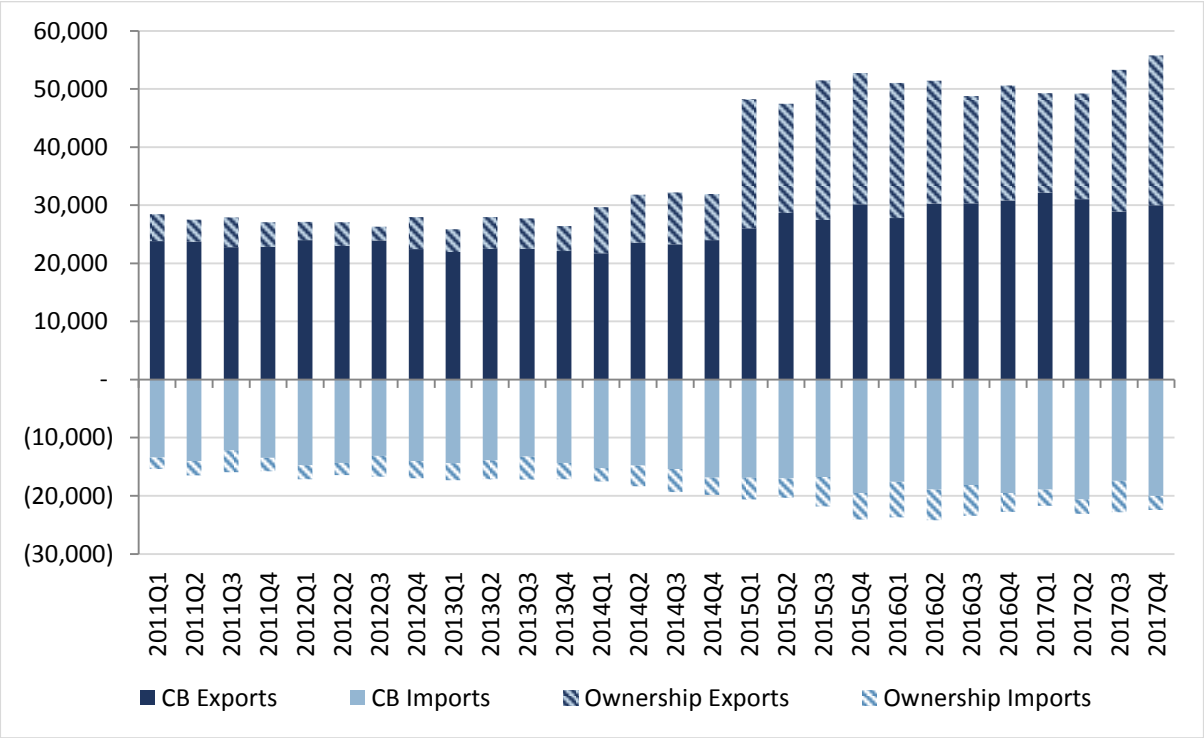
FIGURE 3 CROSS-BORDER AND ADJUSTED NET EXPORTS OF GOODS AND SERVICES (€ MILLION)



Source: Central Statistics Office, *QEC* calculations.

Figure 4 highlights the rise in 2015 in ownership trade, which had a dramatic effect particularly on the export of goods in Ireland. In terms of domestic activity, exports appear to have grown far more gradually than quarterly National Accounts would imply.

FIGURE 4 GOODS EXPORTS AND IMPORTS BY TYPE (€ MILLION)



Source: Central Statistics Office, *QEC* calculations.

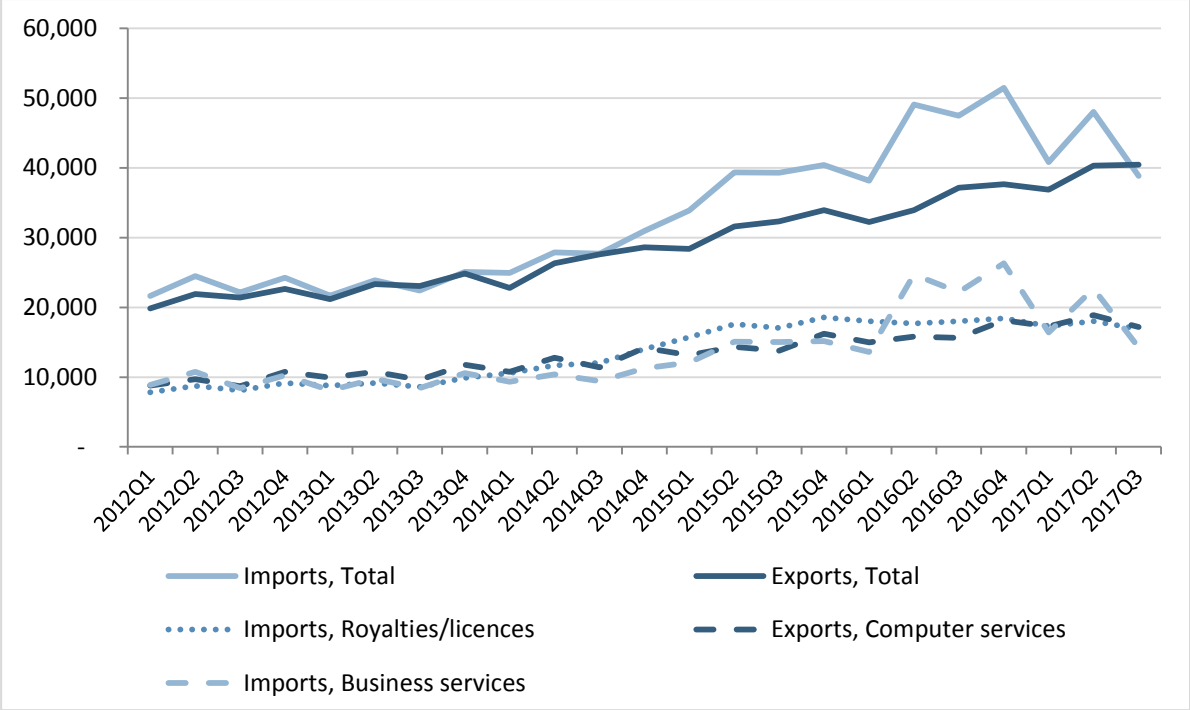
Focusing on the components of cross border trade, exports of food and live animals increased by 12.5 per cent between 2016 and 2017. Medical and pharmaceutical product exports rose by 17.3 per cent between the same periods, netting an increase of €5.2 billion. Organic chemicals, however, saw the largest decline by €3.9 billion (-16 per cent). Medical and pharmaceutical product imports grew 41.2 per cent, increasing by €2.5 billion in 2017. Road vehicles and other transport equipment imports saw the largest combined decrease of €1.7 billion (7 and 9.1 per cent respectively) between the same periods. In total, cross-border exports increased by €2.85 billion with imports rising by €2.76 billion. Ireland's composition of trade partners has further concentrated amongst the UK, the US, the Euro Area and China while trade with the rest of the world, both in terms of imports and exports, fell between 2016 and 2017. In particular, exports to China rose by 34.7 per cent largely through machinery and transport equipment, contributing to a trade surplus with China. This was due to continued rise in electrical machinery exports, which increased from €87.7 million in 2015 to €1.2 billion and €2.3 billion in 2016 and 2017, respectively. Imports from the US rose 11.9 per cent driven by chemicals and related product imports reaching a 60.6 per cent growth rate.

Computer services accounted for 48 per cent of Ireland's total service exports in Q4 2017 and this category has increased persistently over the last number of years. Total service exports increased by 14.3 per cent in 2017. Royalties, licenses

and business service imports comprise 84 per cent of services imports according to our most recent quarterly data. In 2017, royalties/licenses fell annually by 1.4 per cent while business service imports decreased by 16.1 per cent. Within the different business services, research and development saw the most dramatic decrease, falling by 43.1 per cent in 2017 (€20.3 billion). Increases in both royalty payments and research and technology are probably affected by the significant increase in the composition of the domestic capital stock accounted for by MNE intangible assets. The role of MNEs is also central to the 6.9 per cent decline in service imports.

Ireland's composition of trade partners between EU and non-EU members splits evenly in terms of service exports whereas 64 per cent of service imports are sourced from regions beyond the EU28 zone. In terms of annual rates of change, exports and imports to the EU28 remained relatively stable for Q3 2017. Annually, Ireland grew non-EU28 service exports by 20.2 per cent in Q3 2017 while simultaneously lowering service imports by 25.8 per cent for the same period. Figure 5 illustrates how both exports and imports in the services industry have doubled since 2012.

FIGURE 5 EXPORTS AND IMPORTS OF SERVICES (€ MILLION)



Source: Central Statistics Office.

While shares of total trade are falling with respect to the UK, changes in these exports and imports for 2017 remain relatively stable as shown in Table 1 compared with the previous year. Exports and imports of chemicals and related

products saw the largest changes, of 22 and 26 per cent respectively. There was also a significant increase in trade with the US within chemicals and related products (rising by 61 per cent), while there was relatively little growth overall with the rest of the EU for the same period.

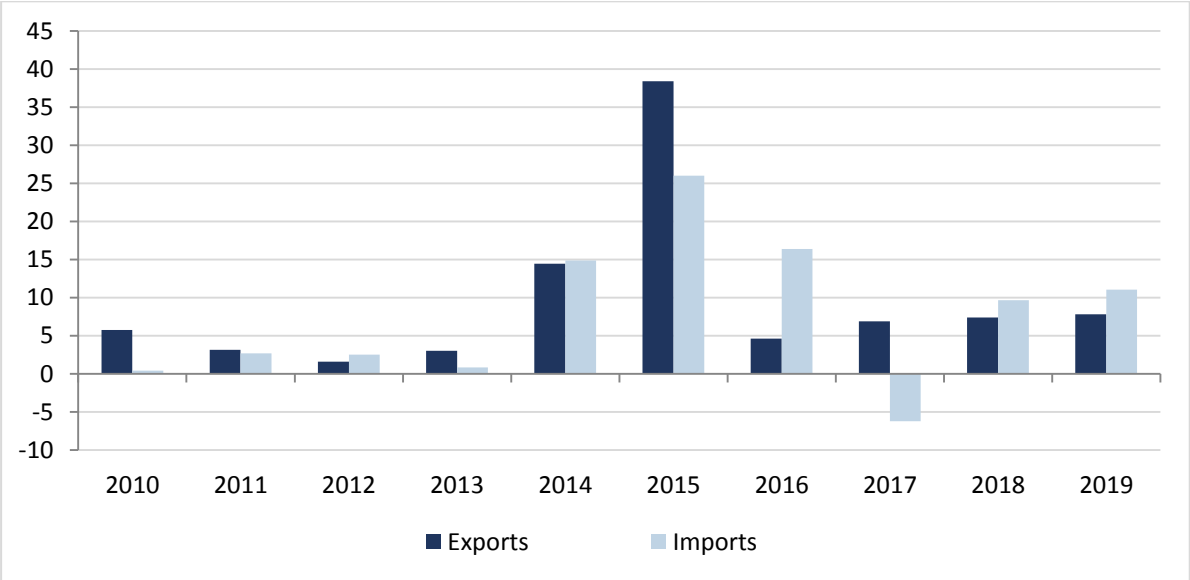
TABLE 1 ANNUAL CHANGE (%) IN GOODS EXPORTS AND IMPORTS FOR THE UK, THE US AND THE REST OF EU FOR MAJOR COMMODITIES

	Exports %	Imports %
Total – UK	**8**	**10**
Food and live animals	8	7
Chemicals and related products	22	26
Machinery and transport equipment	-3	1
Miscellaneous manufactured articles	3	-1
Total – Rest of EU	**3**	**0**
Food and live animals	16	8
Chemicals and related products	2	13
Machinery and transport equipment	6	-8
Miscellaneous manufactured articles	-10	-2
Total – US	**4**	**12**
Food and live animals	16	-11
Chemicals and related products	8	61
Machinery and transport equipment	-14	-9
Miscellaneous manufactured articles	11	2

Sources: Central Statistics Office.

Given the highly volatile nature of ownership trade in goods as well as services, the forecasts in the *Commentary* continue to be based upon trends in trade patterns linked to underlying Irish economic activity. In Figure 6 we raise our 2018 export forecast to 7.4 per cent growth while import is forecasted to grow by 9.7 per cent. For 2019, exports and imports are expected to grow by 7.8 and 11 per cent, respectively. We forecast a weaker trade balance in 2019 due to expected strong growth rates in private consumption, which will likely result in greater demand for imported goods and services.

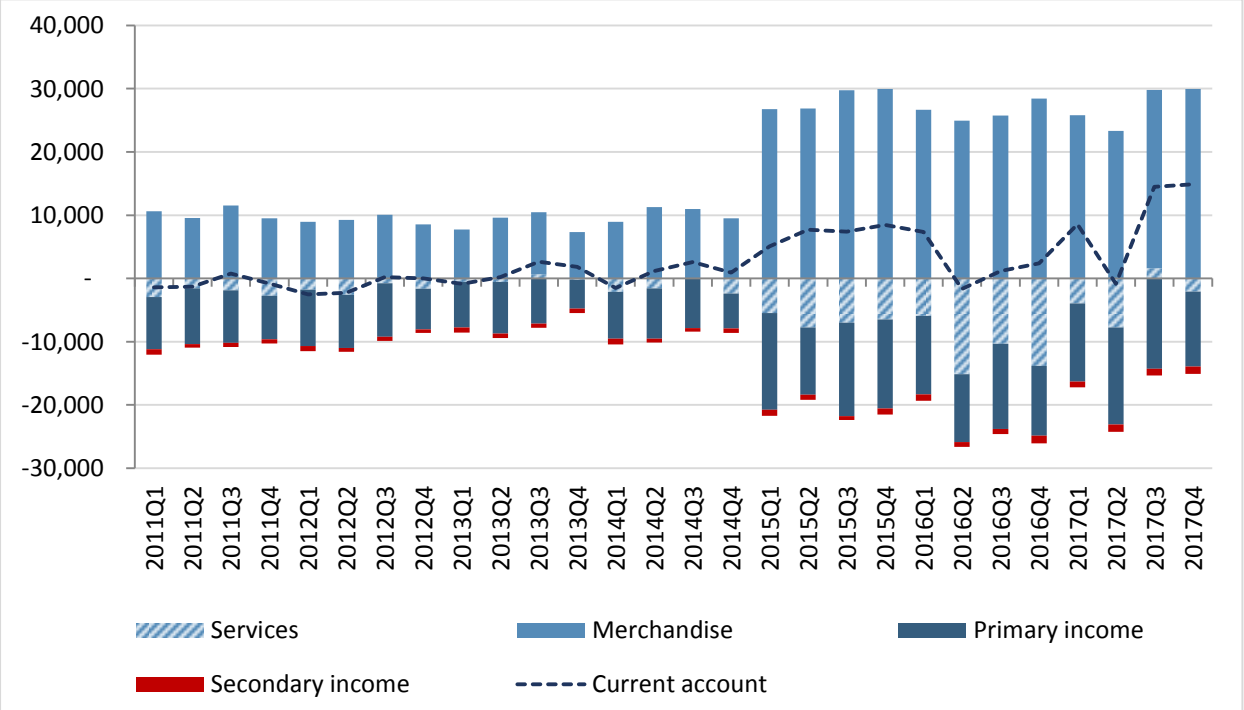
FIGURE 6 IMPORT AND EXPORT GROWTH (2017-2019 FORECASTS)



Source: QEC calculations.

2017's current account balance reached its highest level in 15 years at €37.1 billion. The figure is largely the result of a uniquely positive balance in net services trade as well as an improvement in goods trade. Primary income, which is income from loans and investments, remained relatively steady in comparison. Figure 7 depicts the current account by its various categories of income flows.

FIGURE 7 CURRENT ACCOUNT BALANCE, QUARTERLY (€ MILLION): Q1 2011 – Q4 2017



Source: Central Statistics Office.

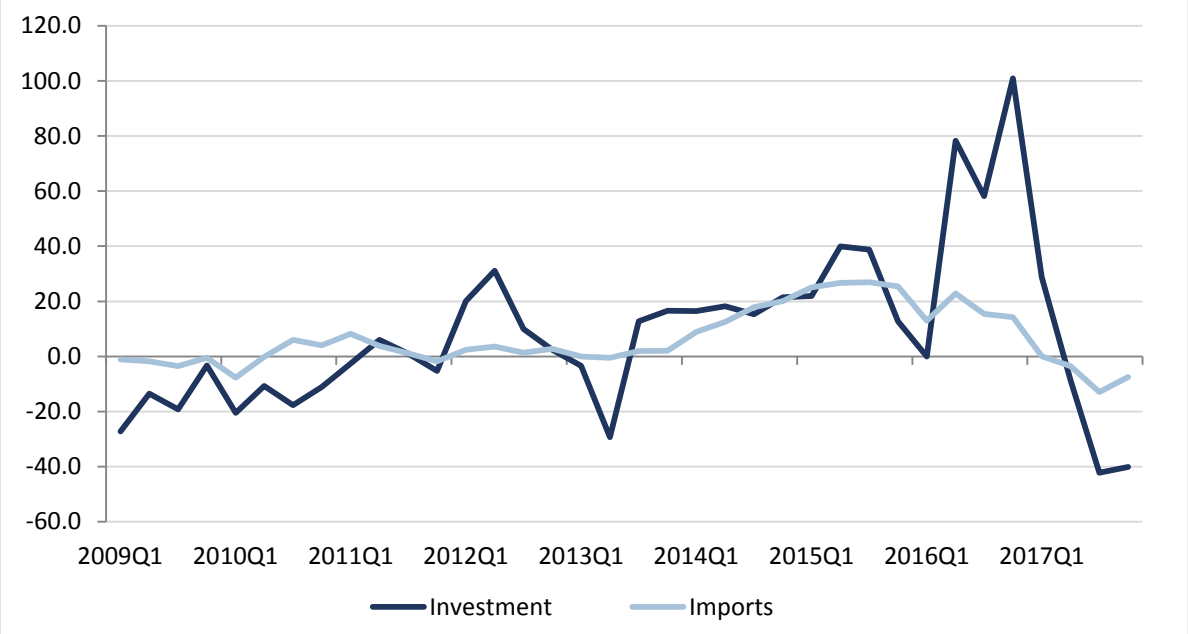
The Domestic Economy

OUTPUT

The domestic section of the *Commentary* is organised as follows; we initially review the outlook for output growth before discussing developments in the Irish monetary and financial sectors. Prices and earnings in the economy are then discussed, followed by a review of demand-side factors such as consumption and housing market issues. On the supply side, we then examine developments in investment and the labour market before concluding with an analysis of the public finances.

The official Irish growth rates indicated that the domestic economy increased by a substantial 7.8 per cent in 2017. However, as with growth rates in 2015 and 2016, it is likely that the headline figure has been impacted by certain developments amongst a small number of multinational firms operating in the Irish jurisdiction. Therefore, it is very difficult to assess from the National Accounts what the rate of underlying activity in the Irish economy actually is. For example, investment and imports both registered highly volatile fluctuations throughout 2017. Figure 8 plots the year-on-year growth rates on a quarterly basis for both aggregates since 2009. The increased volatility in both series since 2015 is readily apparent.

FIGURE 8 YEAR-ON-YEAR GROWTH RATES (%) OF IRISH INVESTMENTS AND IMPORTS: Q1 2009 – Q4 2017



Sources: *QEC* calculations for Ireland, AMECO estimates for all other countries.

Notwithstanding the new indicators which have and are about to be provided by CSO, it is time for a more ambitious project which seeks to produce National Accounts on a dual basis; one that captures developments in headline variables as per the ESA2010 definitions, and one that captures developments in the non-multinational sector of the economy. FitzGerald (2015) has called for the preparation of National Accounts for the MNE and the non-MNE sector.[5] However, as noted in the investment section of the *Commentary*, it may not be sufficient to prepare National Accounts purely on this basis; information from the CSO Census of Industrial Production would suggest that large distortionary movements are also apparent for relatively small companies in the Irish economy i.e. ones that employ between ten and 49 people. Therefore, this argues for a more granular breakdown in the preparation of the National Accounts where firms with large distortionary transactions are excluded from a parallel set of accounts. This is required both for the output side of the National Accounts and on the expenditure side so that estimates of exports, imports and investment are also available.

In this *Commentary* we have the first forecast for a period which occurs during Brexit i.e. the UK is set to leave the EU in March 2019. Following Bergin et al. (2016), we assume that Brexit will impact the Irish economy on a gradual basis over the medium term. Therefore, we do not expect any significant impact on our 2019 forecasts. As with Bergin et al. (2016), our baseline technical assumption is that a European Economic Agreement (EEA) agreement will exist between the UK and the EU similar to that between Norway and the EU.[6]

MONETARY AND FINANCIAL CONDITIONS

Trends in lending

Figure 9 presents the annual growth rates of credit to households from Irish resident credit institutions. The data are split by loans for house purchase and other personal loans (auto finance, credit cards, student loans etc.). Overall, the change in credit for house purchase continues to decline, down -0.2 per cent year-on-year to Q3 2017. While the continued reduction in credit stocks indicates that deleveraging is still ongoing amongst households, the annual reduction of -0.2 per cent would suggest the process is slowing down. The expansion in the housing market and the increasing number of housing transactions is likely to see further increases in credit levels.

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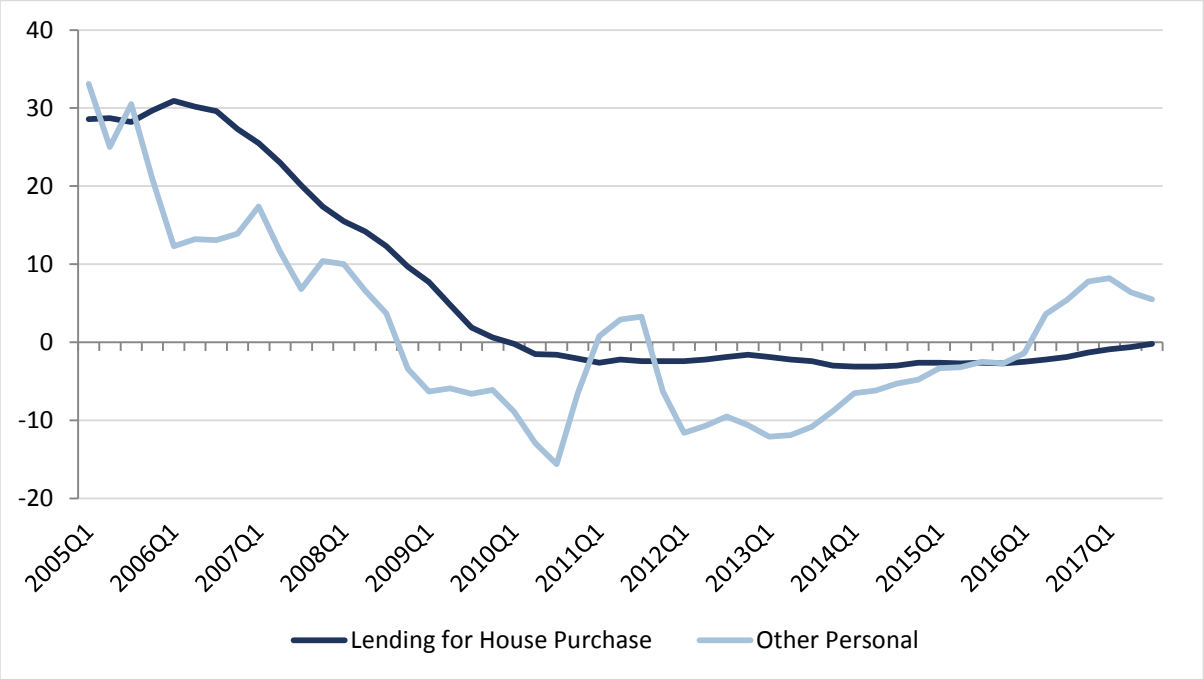
5 FitzGerald, J., 2015. 'Problems Interpreting the National Accounts in a Globalised Economy – Ireland', *Quarterly Economic Commentary*, Summer 2015, Economic and Social Research Institute (ESRI).

6 Bergin, A., A. Garcia Rodriguez, N. McInerney, E. Morgenroth and D. Smith, 2016. 'Modelling the Medium to Long Term Potential Macroeconomic Impact of Brexit on Ireland,' Working Paper WP548, Economic and Social Research Institute (ESRI).

In Q3 2017, we observe an increase in the growth rate of lending for non-housing related household loans which are now up 5.5 per cent on a year-on-year basis. This represents a moderate decline in the rate of growth from 6.4 per cent in Q2 2017. As these loans are mainly for consumption purposes and auto financing, the broader recovery in household spending is undoubtedly leading to an increase in demand for this type of financing.

FIGURE 9 GROWTH RATES OF CREDIT TO HOUSEHOLDS (%)

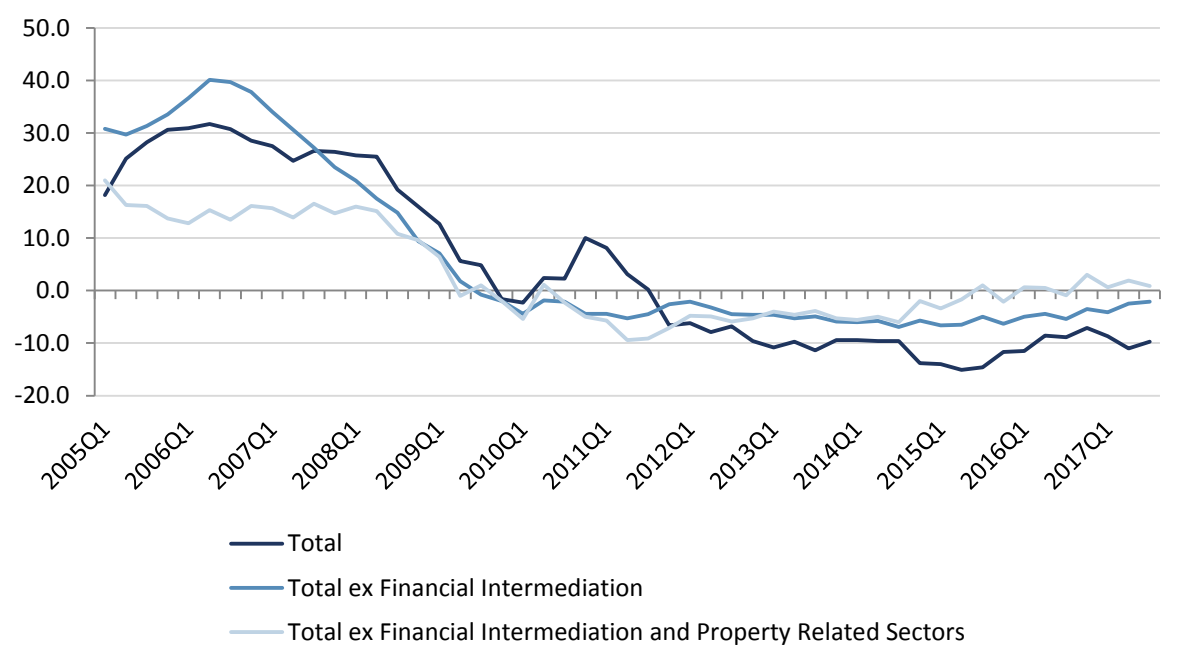


Source: European Central Bank, Statistical Data Warehouse.

Notes: Data are taken from Central Bank of Ireland data release A.18, Growth rates series codes 777 and 1,252.

Turning to the provision of credit to Non-Financial Corporations, the overall stock of credit continues to decline, down by 9.7 per cent in Q3 2017 year-on-year which represents a marginal reduction in the pace of deleveraging from Q2 2017. However, when the financial and property related sectors are removed from the calculations, lending increased to the remaining sectors by 0.9 per cent in Q3 2017. The difference between the trends in credit provision for corporates and credit to the non-construction 'real economy' shows that the legacy of the financial crisis still remains in certain sectors of the Irish economy.

FIGURE 10 GROWTH RATES OF CREDIT TO PRIVATE SECTOR ENTERPRISES (%)

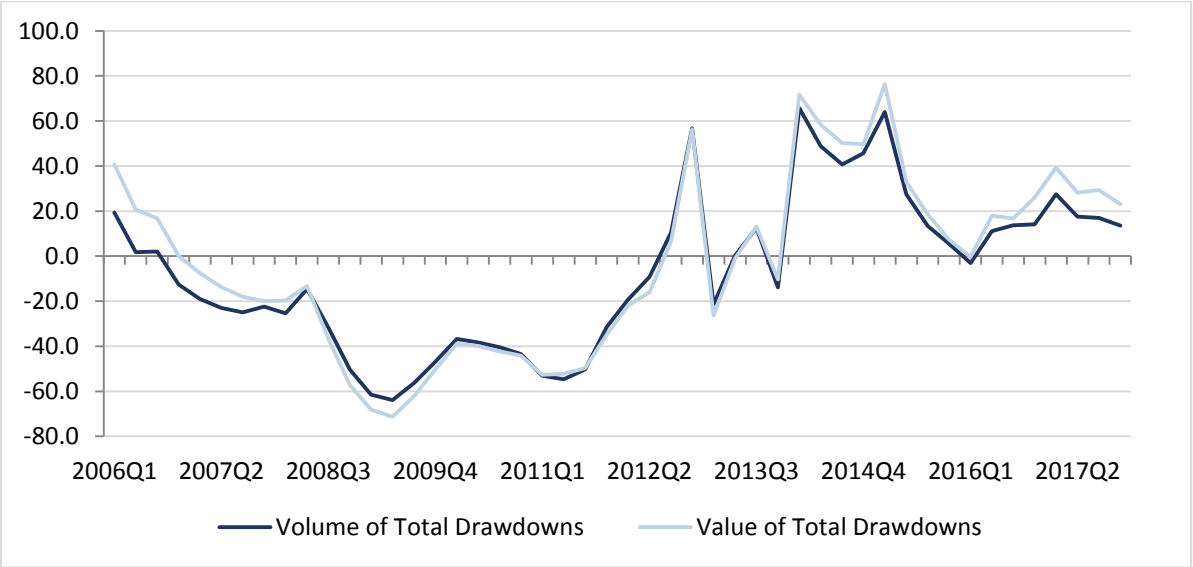


Source: Central Bank of Ireland, Credit, Money and Banking Statistics.

A healthy credit market provides adequate volumes of appropriately priced credit at prudent loan conditions to firms and households. As the Irish economy continues to grow, it is important to monitor emerging trends in new lending from two perspectives: 1) that sufficient credit is flowing to ensure new investments can be made and 2) that lending activity does not begin to become unsustainable or imprudent.

Using new mortgage lending data from the Banking and Payments Federation, in Q4 2017 the volume of new mortgage drawdowns increased by 13.5 per cent year-on-year, and the value of mortgages increased by 23 per cent year-on-year. The relatively higher growth rate in the value reflects the fact that borrowers are drawing down larger and larger loans given the increased house price environment. The average loan size for mortgages was €223,851 in Q4 2017 which is 88 per cent of the peak value in Q1 2008. Indeed, the value of new drawdowns exceeded €2 billion in Q3 2017 for the first time since 2009, indicating the heightened level of activity in the credit market. In Q4 2017, the value of lending was €2.2 billion for the quarter.

FIGURE 11 YEAR-ON-YEAR GROWTH RATE OF CREDIT TO HOUSEHOLDS (%)



Source: Banking and Payments Federation Ireland.

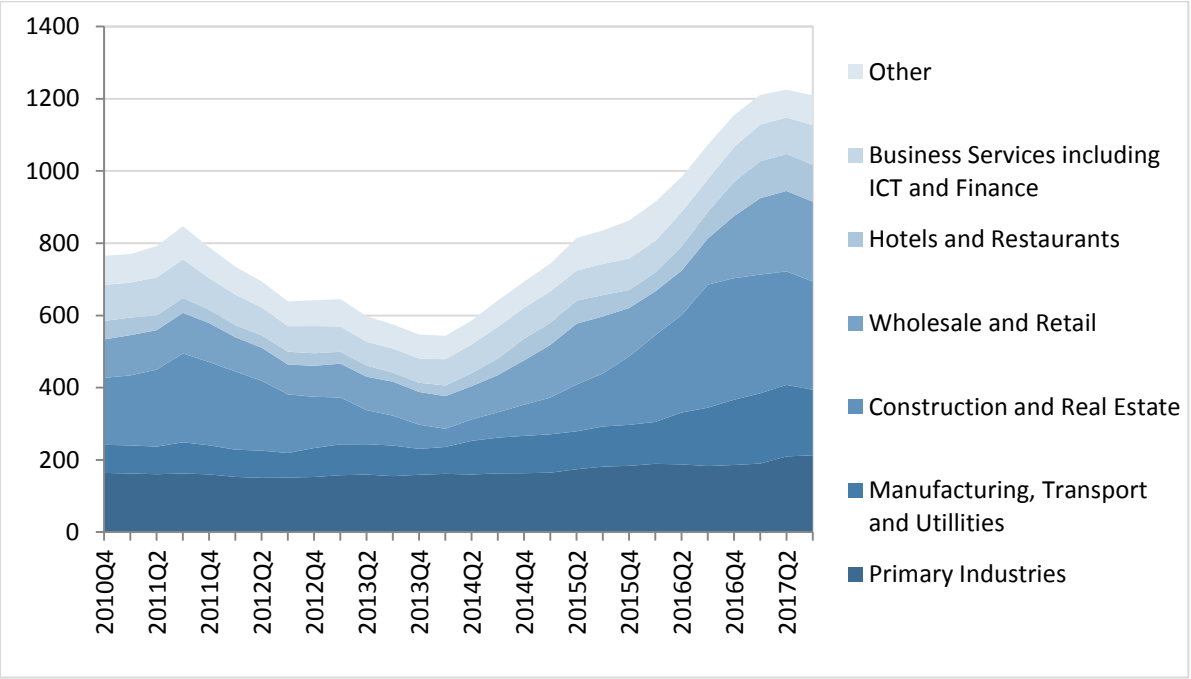
Given the increased lending apparent, the policy framework governing credit provision is clearly very important if financial stability is to be ensured. In that regard, the macroprudential framework currently being deployed by the Central Bank, with prudent loan-to-income limits are central to sustainable credit provision. The description of the underlying mortgage loans published in Kinghan et al. (2017)[7] suggests origination is currently not overly risky, with low average LTI and LTV. The recent changes to the macroprudential regulations, announced in November 2017, maintain the prudency of the overall framework.

Another aspect of new lending that provides a guide to the health of the domestic economy is lending to small business. Loans to Irish small- and medium-sized enterprises (SMEs) grew steadily in 2016 (Figure 12). This continues the trend in overall SME lending which began to increase in 2015 from mid-2014 lows.

Gross new lending was €1,058 million in Q3 2017, down from €1,121 million one year earlier. This represents a trend of declining new lending throughout 2017. Given the buoyancy of the recovery in the domestic economy, a decline in new lending for SMEs is difficult to reconcile. However, uncertainties potentially related to Brexit may be affecting credit demand in some sectors.

7 Kinghan, C., P., Lyons, Y., McCarthy, and C., O'Toole, 2017. 'Macroprudential Measures and Irish Mortgage Lending: Insights from H1 2017', Economic Letters 13/EL/17, Central Bank of Ireland.

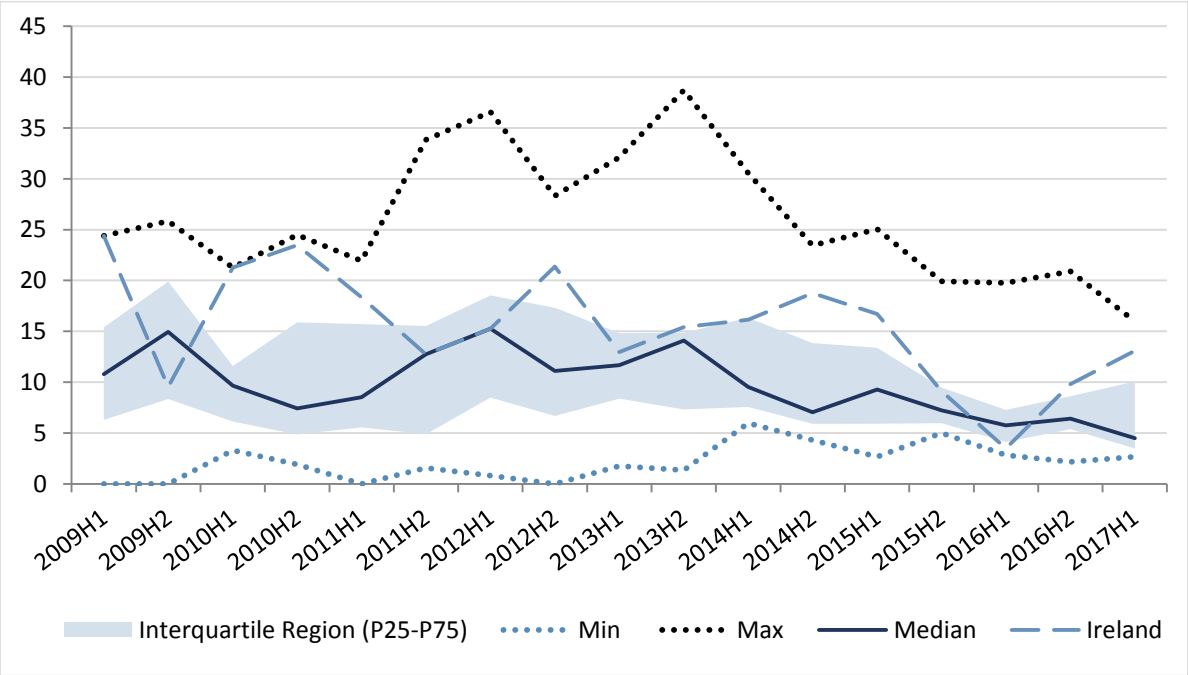
FIGURE 12 QUARTERLY NEW LENDING TO IRISH SMES BY SECTOR (4-QUARTER ROLLING AVERAGE)



Source: Banking and Payments Federation Ireland

Another sign of slightly deteriorating credit environment for SMEs is a rise in the rejection rates for Irish loans relative to European peers. Data from the ECB Survey on Access to Finance for SMEs (SAFE) provide a benchmark for rejection rates in Ireland relative to other European economies. These are presented in Figure 13. Following the financial crisis, rejection rates for Irish firms increased considerably, and were amongst the highest in the Eurozone. Since mid-2014 rejection rates have been declining in Ireland relative to other countries and by early 2016 rates were well below the median in the Euro Area. The most recent data for end 2016 indicate a pickup in rejection rates and this has continued into the first half of 2017.

FIGURE 13 AVERAGE REJECTION RATE FOR BANK LOANS – IRISH AND EUROPEAN SMES

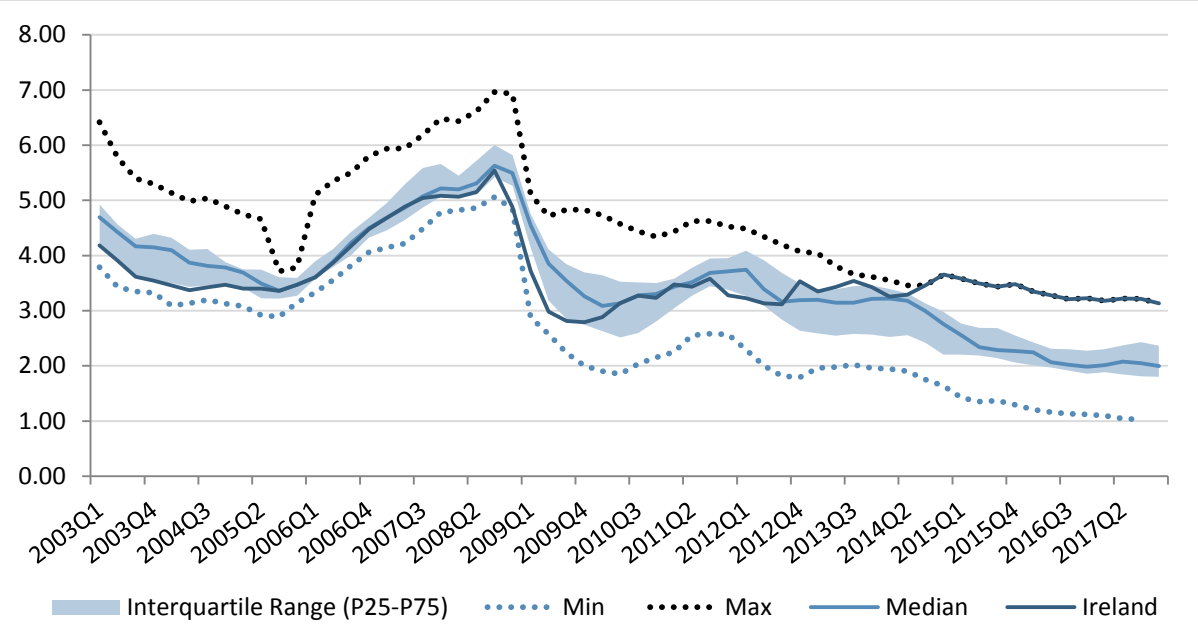


Source: ECB SAFE Survey.

Interest rates and the cost of finance

A feature of the domestic recovery is that the cost of finance in Ireland for both corporate and household credit is high by European standards. More recently, competitive pressures are increasing in the mortgage market and some reductions in lending rates are occurring. The standard variable rate on new mortgage loans in Ireland stood at 3.32 per cent as of December 2017; this is down slightly year-on-year from 3.40 in December 2016. However, comparing Irish new house purchase loans relative to other Eurozone economies, it can be seen that new lending rates are the highest of the comparison group (Figure 14). As of December 2017, interest rates on new house purchase in Ireland were nearly 1.2 per cent higher than the median of the other countries presented. This gap has widened since mid-2014 when Irish interest rates began to decouple from the ECB policy rate.

FIGURE 14 INTEREST RATES ON NEW HOUSE PURCHASE LOANS TO HOUSEHOLDS – EUROPEAN COMPARISON

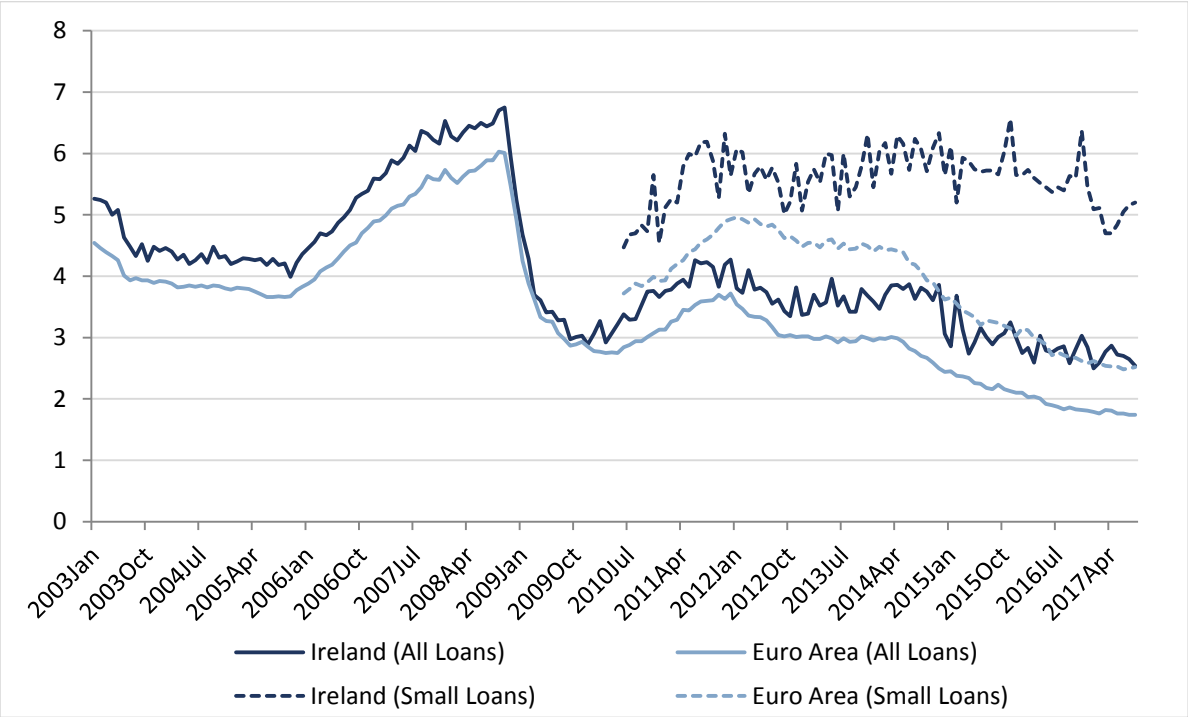


Source: ECB MFI data.

Notes: Countries included are: AT, BE, EE, ES, FI, FR, IE, IT, LT, NL, PT, SI. These countries are selected due to data availability. Data differ between this chart presented and the text as the ECB comparison data include restructured mortgages whereas the new business SVR is only for new drawdowns.

A similar picture emerges in relation to corporate interest rates. Figure 15 presents the interest rates on new business loans for Non-Financial Corporations in Ireland relative to the average for the Eurozone. Two series are presented: 1) covering all loans and 2) capturing loans of less than €250,000 which is used as a proxy for loans for SMEs. In December 2017, the average rate on new loans for all Irish corporates was 2.83 per cent while the Eurozone average was 1.71 per cent. For small Irish corporate loans, the interest rate in December 2017 was 5.29 per cent compared with a Eurozone average of 2.39 per cent. Interest rates are down year-on-year for small corporates but remain considerably higher than for their European peers.

FIGURE 15 INTEREST RATES ON LOANS TO NON-FINANCIAL CORPORATIONS – EUROPEAN COMPARISON



Source: ECB MFI data. Small loans refer to loans less than €250,000.

Household and firm deposits

Central to understanding the financial position of households is information on their savings and investment behaviour. In this regard, the ESRI has, since 2010, compiled a monthly savings index, which examined how much households were saving as well as their attitudes to the savings environment.

However, since October 2017, the ESRI has begun publishing a revised and updated Savings and Investment Index with Bank of Ireland that incorporates not only households' savings activity but also their investment behaviour. This broader and more insightful index will further deepen our understanding of the financial position of households in Ireland. The most recent data from the Index indicate that households have increased savings rates in 2017 and feel 2018 is a good time to save. Households' views on the investment environment have also improved which probably reflects the improved domestic economic situation and global growth buoyancy. Box 1 below provides more detail on the new Index.

BOX 1 MONITORING HOUSEHOLD FINANCIAL DECISIONS – THE NEW BANK OF IRELAND/ESRI SAVINGS AND INVESTMENT INDEX

The Bank of Ireland/ESRI Savings and Investment Index tracks household attitudes towards savings and investment as well as monitoring their perspectives on the current and future savings and investment environment. Understanding savings behaviour provides insight into how households smooth consumption across economic cycles, plan for major purchases and build up buffers which can be drawn down in times of economic stress. Monitoring household investment patterns gives an understanding of how they are putting their money to work, their financial diversification, and their appetite for risk. The sample covers 800 consumers aged 16 years and above and is nationally representative.

The Index is built on two pillars: A Savings Pillar and an Investment Pillar. The Savings Index is composed of two sub-indices: Savings Attitudes (savings behaviour and how respondents feel about the amount they save) and Savings Environment (perceptions of the current savings environment and expectations for the environment in six months).

The new Investment Index mirrors the Savings Index with the survey looking at whether or not households invested in the following range of assets: stocks, pension plan, investment fund, bonds, property or other assets. These data are used, in conjunction with a question on whether or not households feel they are investing sufficiently, to create an Investment Attitudes Index. An Investment Environment Index is compiled based on questions about whether households think it is a good time to invest now or whether they expect it to be a good time in six months. These two elements are aggregated into an Investment Index.

TABLE A SAVINGS AND INVESTMENT INDEX

Month	Savings and Investment Index	Savings Index			Investment Index		
		Overall	Attitudes	Environment	Overall	Attitudes	Environment
Nov-16		**95.5**	100.6	90.3			
Dec-16		**90.2**	91.2	89.2			
Jan-17		**94.8**	98.3	91.3			
Feb-17		**89.2**	87.4	91.0			
Mar-17		**96.3**	100.6	92.1			
Apr-17		**92.9**	95.8	90.0			
May-17		**94.8**	95.9	93.7			
Jun-17		**90.4**	91.7	89.2			
Jul-17		**95.1**	96.9	93.3			
Aug-17		**89.9**	94.3	85.5			
Sep-17		**98.0**	102.7	93.4			
Oct-17	**100.0**	**100.0**	100.0	100.0	**100.0**	100.0	100.0
Nov-17	**103.4**	**104.2**	107.7	100.8	**102.5**	106.1	98.9
Dec-17	**101.9**	**102.7**	107.7	97.6	**101.2**	104.2	98.2
Jan-18	**101.6**	**103.3**	101.5	105.1	**100.0**	95.2	104.8

The Savings and Investment pillars are then averaged to provide an overall Savings and Investment Index. This broader and more insightful index will further deepen our understanding of the financial position of households in Ireland and explore what is driving their behaviour.

In terms of recent trends in the Index, the monthly Savings and Investment Index remained flat at 102 points in January 2018 relative to December 2017. While there was a decrease in savings and investment attitudes, consumer's views on the savings and investment environment improved. Respondent's positive views on the savings and investments environment may be driven by two aspects: 1) continued improvement in Irish consumer finances and the labour market; 2) reduced global uncertainty and a better international trading environment.

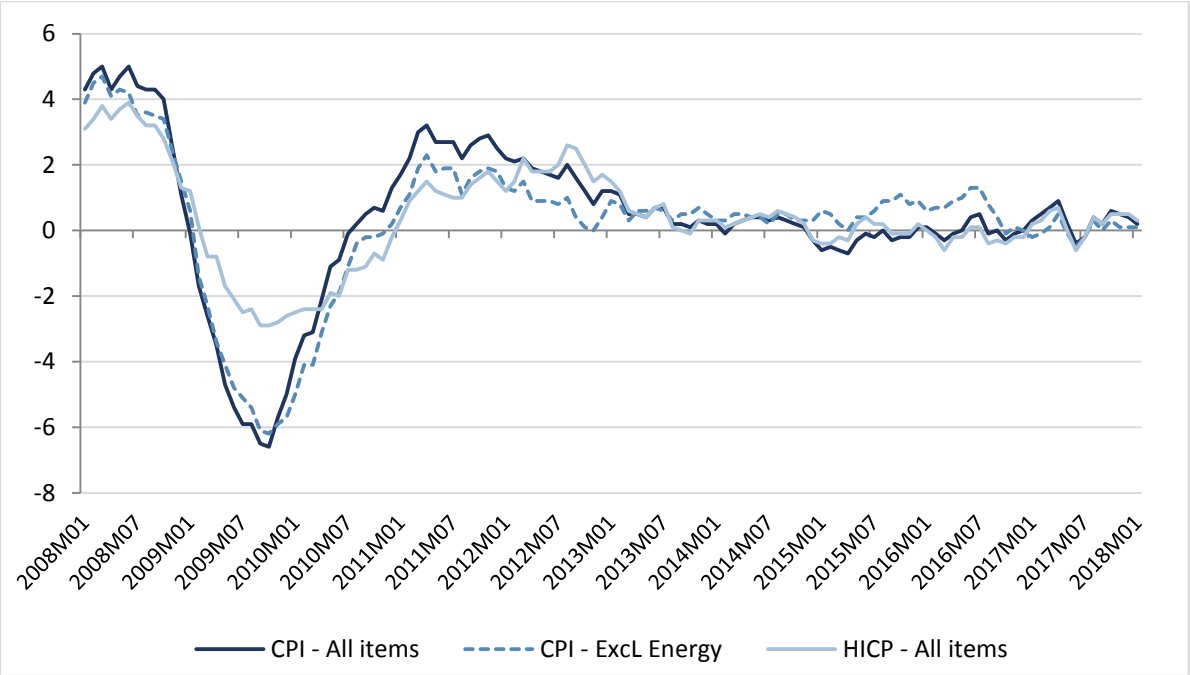
This box was prepared by Teresa Monteiro, Conor O'Toole, and Dorothy Watson.

PRICES AND EARNINGS

The Consumer Price Index (CPI) increased by 0.4 per cent in 2017 having not changed in 2016. Figure 16 shows the relatively low inflation rate persisting since early 2013. The increase in overall prices within 2017 was mainly driven by inflation within housing, water, electricity, gas and other fuels (up 2.0 per cent on average), restaurants and hotels (up 2.9 per cent on average) and transport (up 2.2 per cent). Compared to last year, price growth slowed in education as well as for goods such as alcoholic beverages and tobacco.

Other goods in the economy continue to experience declines in prices. Prices fell by 4.3 per cent in clothing and footwear, having fallen by 2.4 per cent in the previous year. Furnishings, household equipment and routine household maintenance also experienced deflation, with prices down 4.2 per cent on the previous year. Prices for recreation and culture as well as for food and non-alcoholic beverages both fell by 2.0 and 2.1 per cent, respectively. The Harmonised Index of Consumer Prices (HICP) rose by 0.3 percentage points in 2017, resulting in the Irish economy experiencing the lowest rate of inflation across the EU28.

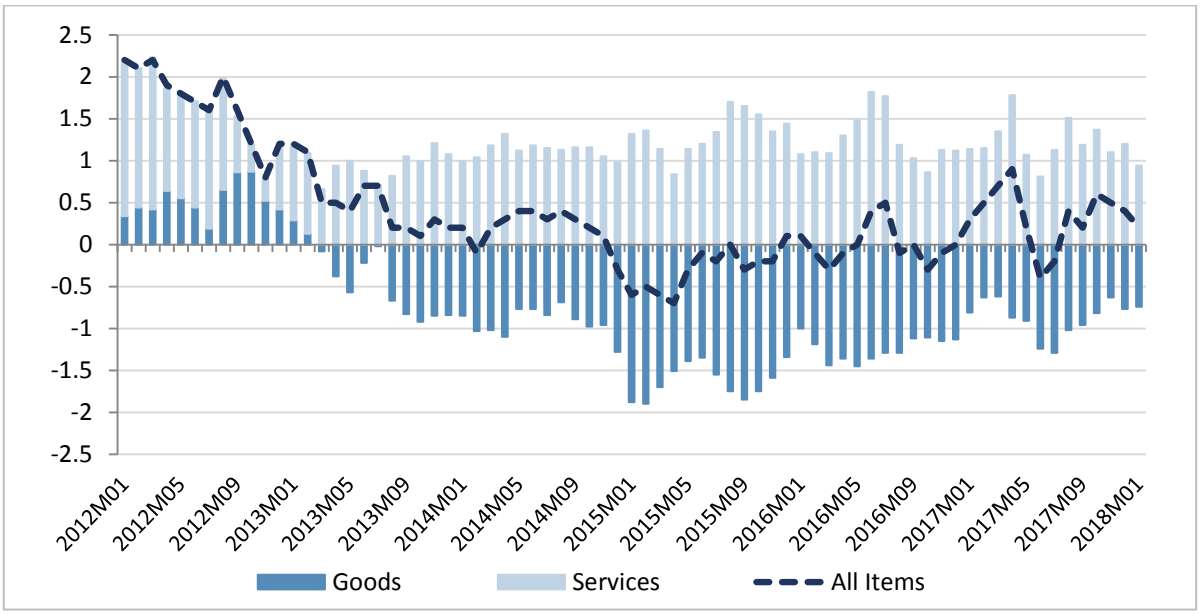
FIGURE 16 ANNUAL GROWTH IN INFLATION (%)



Source: Central Statistics Office.

The difference in price trends between goods and services continues to widen as the economy moves into 2018. The underlying trends in the CPI (Figure 17) indicate prices for services have averaged a 2.2 per cent increase in 2017 while the price of goods has fallen by 2.1 per cent. This follows an average 2.2 per cent rise in service prices and a 3.0 per cent fall in goods prices for 2016. Examining the CPI of goods in January 2018 reveals that prices have fallen to a level last seen in November 1999. Given our current forecasts of accelerated wage growth, increased private consumption expenditure and rising oil prices, it is expected that the disinflation experienced by certain goods will slow down through 2018.

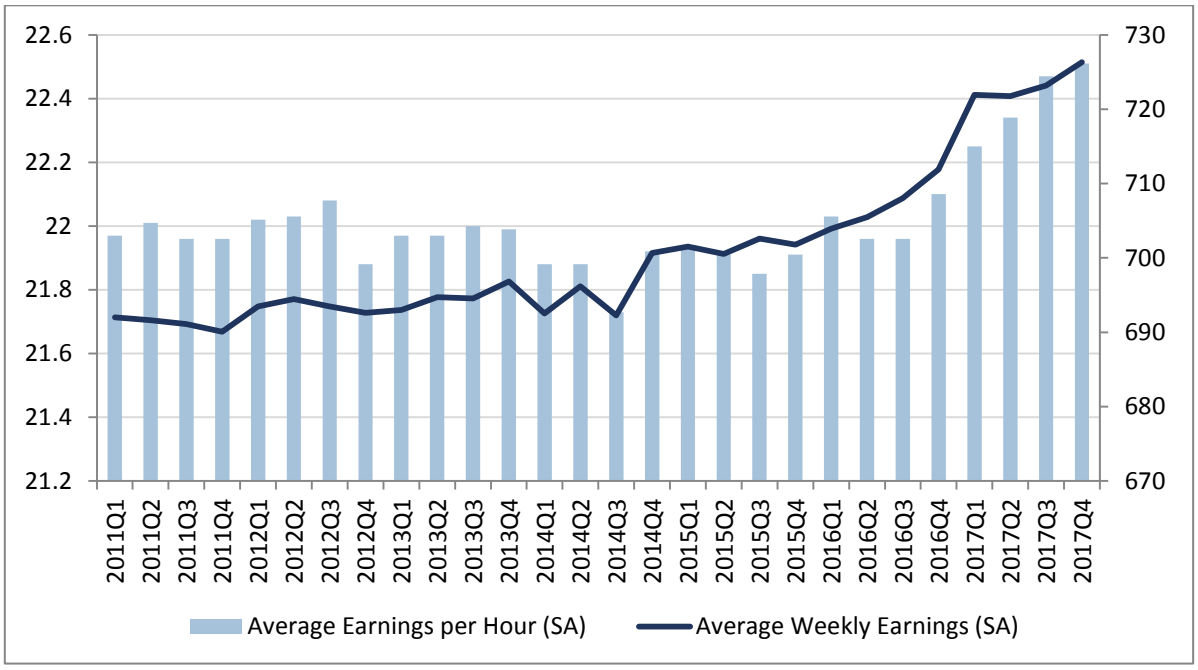
FIGURE 17 DECOMPOSITION OF ANNUAL (%) CPI GROWTH INTO GOODS AND SERVICES GROWTH



Source: Central Statistics Office.

Fourth quarter earnings data from the CSO indicate that seasonally-adjusted Average Hourly Earnings increased by 0.2 per cent compared to the previous quarter. On an annual basis, earnings increased by 1.9 per cent up to €22.51. The largest increase for the quarter was observed in the professional, scientific and technical activities sector rising by 8.42 per cent (an additional €2.11 per hour) compared to the final quarter of the previous year. Other notable increases occurred in ICT and education, with earnings per hour rising by 4.6 per cent and 4.4 per cent, respectively. Figure 18 highlights rising earnings occurring both on an hourly and weekly basis within 2017.

FIGURE 18 TRENDS IN AVERAGE EARNINGS PER WEEK AND PER MONTH (€)

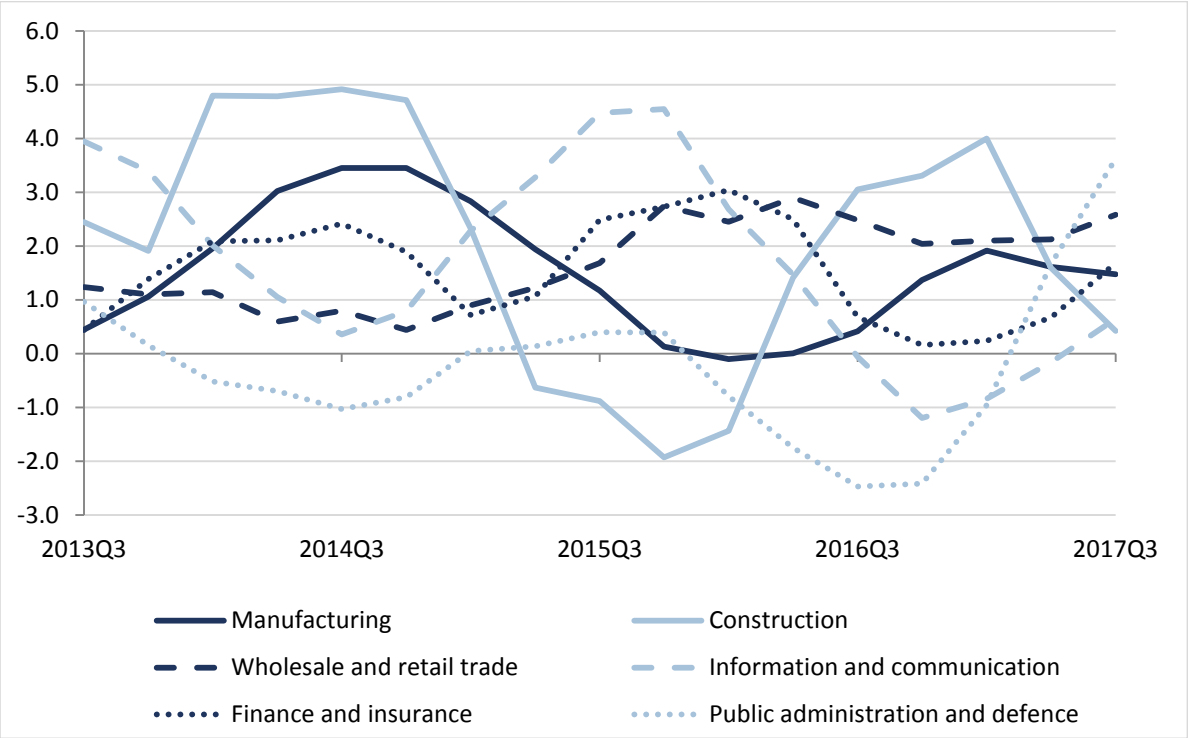


Source: Central Statistics Office.
Note: The y-axis on the LHS scale has a very low range of values.

Since Q2 2016, the growth of average weekly earnings has increased. If this trend continues, improvements in households' earnings are likely over the short to medium term. After a substantial rise in Q1 2017, growth remained relatively slower for the remaining three periods. As of Q4 2017, the average weekly earnings reached €726.31, representing a 2 per cent increase from €711.91 in Q4 2016. Increases in earnings should lead to continued consumption growth.

When examining these trends further, strong differences emerge between different sectors of the economy. The largest gains in earnings over the last year occurred within the public administration and professional, scientific and technical activity sectors with weekly earnings rising, on average, by €38.99 and €30.70 respectively. After an annualised drop in construction sector earnings both in the second and fourth quarters of 2017, pay only saw a modest rise of €1.34 on average in that sector. Of the 13 sectors examined, arts and entertainment experienced the only decline for the overall year, with weekly earnings averaging a 0.6 per cent fall, equating to a €2.78 reduction. Figure 19 presents a four-quarter moving average growth rate by sector to display the trends over time in earnings pressures. As of Q4 2017, a positive trend persists with overall earnings increasing by 2.3 per cent compared to the same period last year. The public administration sector exceeds this average, having emerged from a prolonged period of earnings reductions between 2013 and 2016.

FIGURE 19 FOUR-QUARTER MOVING AVERAGE GROWTH BY SECTOR IN WEEKLY EARNINGS



Source: Central Statistics Office.

Growth in employment appears to be contributing towards increased wage pressures in the Irish economy. In light of strong domestic demand and the continuously positive labour market performance, we expect both wages and prices to increase over the coming years. Furthermore, as Lawless and Morgenroth (2018) detail in their special article to this *Commentary*, the possibility of a hard Brexit in early 2019 may also add to price pressures on imported goods. Note a hard Brexit is different from the assumption made about Brexit in the *Commentary* for the 2019 forecast. Consumer prices are expected to increase moderately by 0.7 per cent in 2018, followed by 1.1 per cent in 2019. Earnings are forecast to rise by 2.5 per cent and 3.5 per cent for the same periods, meaning real wage growth is likely to continue rising as the economy approaches full employment levels.

TABLE 2 INFLATION MEASURES

	2016	2017	2018	2019
	Annual % Change			
CPI	0.0	0.4	0.7	1.1
Growth in Average Hourly Earnings	1.7	2.1	2.5	3.5

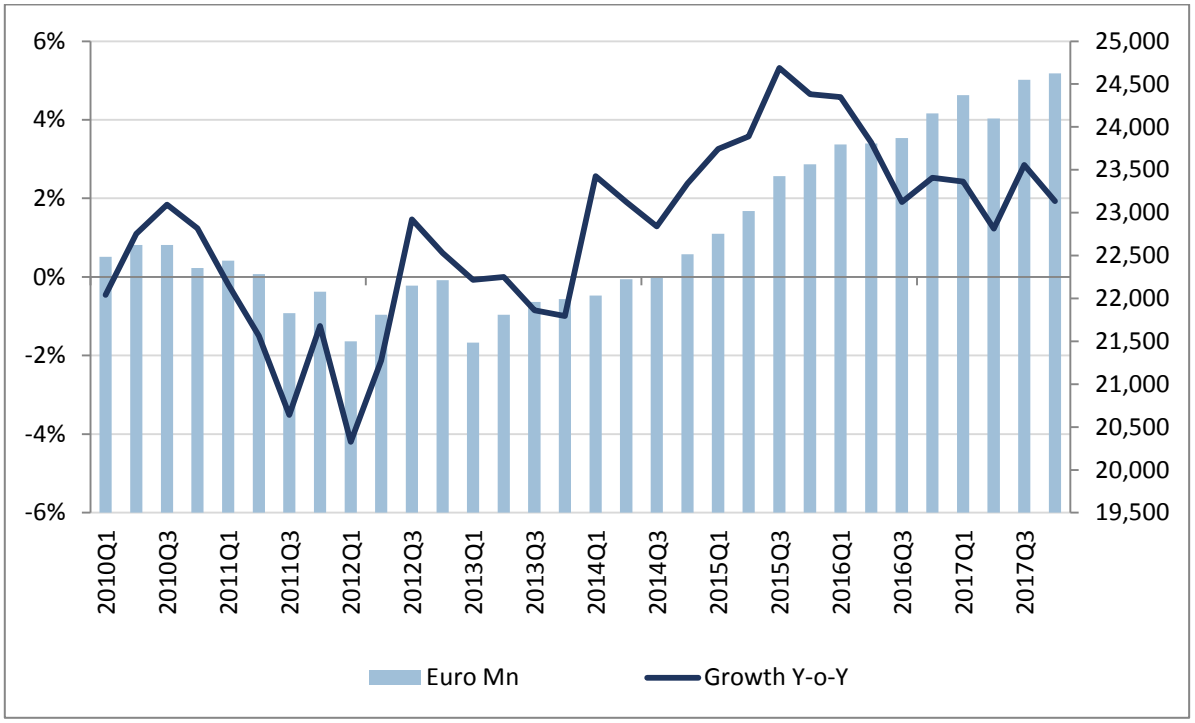
Sources: Central Statistics Office and ESRI forecasts.

DEMAND

Household sector consumption

Private consumption expenditure continues to benefit from the ongoing improvements in the labour market. The most up-to-date quarterly National Accounts show that, on an annualised basis, personal consumption expenditure increased by 2.8 per cent in Quarter 3, 2017 and 1.9 per cent in Quarter 4, 2017. On a quarter-on-quarter basis, consumption spending increased by 1.9 per cent and 0.3 per cent, respectively. The persistent fall in unemployment, increase in disposable incomes and an improvement in household balance sheets have all provided a supportive context for household spending.

FIGURE 20 QUARTERLY PERSONAL CONSUMPTION ON GOODS AND SERVICES – CONSTANT MARKET PRICES AND SEASONALLY ADJUSTED



Source: Central Statistics Office.

An important leading indicator for consumption is developments in retail sales. These indicators provide a snapshot of what goods and services households are purchasing and where the growth is coming from. Table 3 presents retail sales for selected items in terms of the annual growth rate in the volume of sales. For all businesses retail sales are up 7.2 per cent in the year to December 2017.

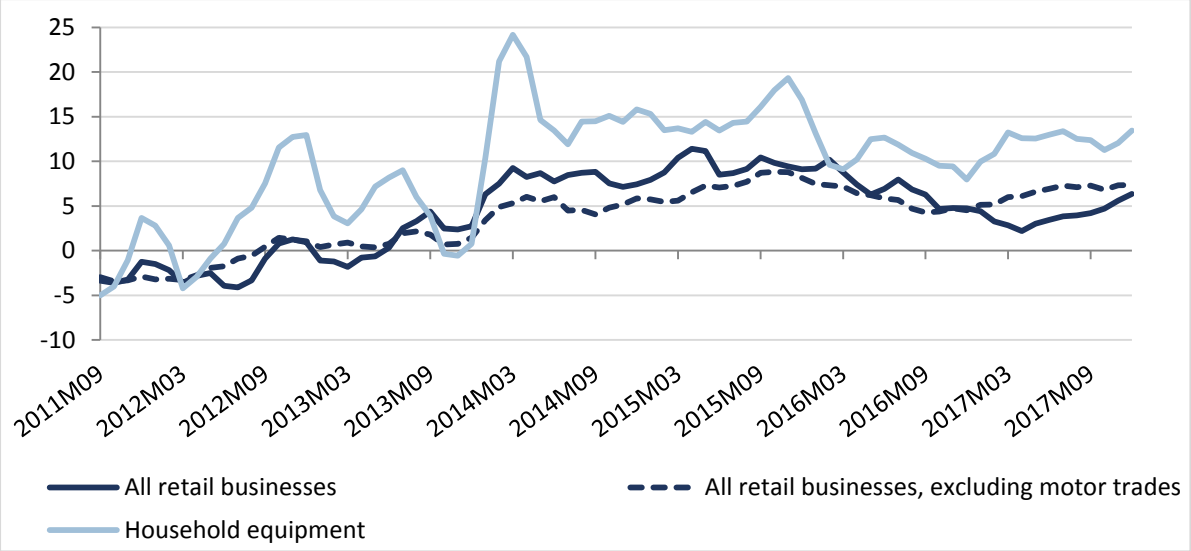
TABLE 3 ANNUAL GROWTH IN SELECT RETAIL SALES (VOLUME) ITEMS (DECEMBER 2017)

Retail Business – NACE REV 2	Volume of Sales
	Annual % change
Motor trades	1.9
Non-specialised stores (excluding department stores)	5.6
Department stores	9.0
Clothing, footwear and textiles	5.7
Furniture and lighting	17.3
Hardware, paints and glass	13.3
Electrical goods	16.0
All businesses excl. motor trades	7.6
All businesses	7.2

Source: Central Statistics Office.

The rise in consumer expenditures seems to be closely related to the recovery in the housing market. In the year to December 2017 there was a significant increase in furniture and lighting (up 16.1 per cent year-on-year), electrical goods (up 16.0 per cent year-on-year) and hardware, paints and glass (up 13.3 per cent year-on-year). The overall trends in retails sales are displayed in Figure 21. This chart presents a three-month rolling average of retail sales for total sales, sales excluding the motor trade, and for household equipment. Of note is the high growth in housing equipment (13.4 per cent in December) and the continued strength of all retail sales excluding the motor trade (7.4 per cent in December). As the construction sector continues to grow and housing transactions increase, it is likely that the sales of goods related to housing formation will maintain strong growth.

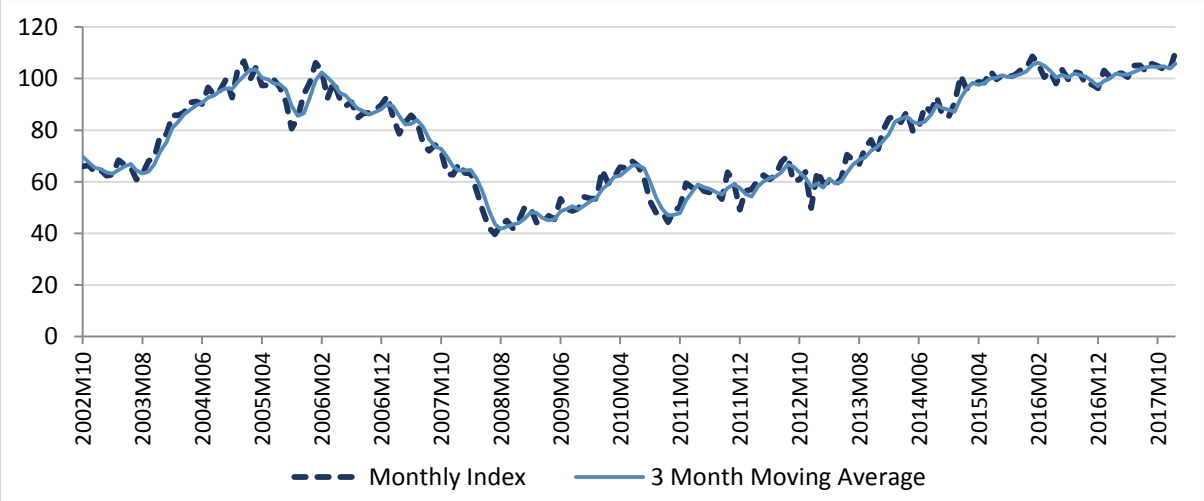
FIGURE 21 AVERAGE GROWTH IN RETAIL SALES INDEX VOLUME ADJUSTED (BASE 2005=100), THREE-MONTH ROLLING AVERAGE



Source: Central Statistics Office.

As a complement to the retail sales data, it is salient to review trends in consumer sentiment. Figure 22 presents the ESRI/KBC Consumer Sentiment Index which tracks the monthly views of households on their current and future economic perspectives. While international geopolitical factors were likely to have contributed to a weakening of consumer sentiment in mid to late 2016, from February 2017 to February 2018 the monthly index followed an overall positive trend. The three months moving average index reached its highest value in December 2017 (106.3 index points). One of the main drivers recently observed in the index was the strengthening of households' views on their personal financial outlooks relative to 12 months ago. This suggests that economic growth is increasingly being felt by the wider population. The sentiment indicators correlate with the growth in average weekly earnings observed in the prices and earnings section of the *Commentary*.

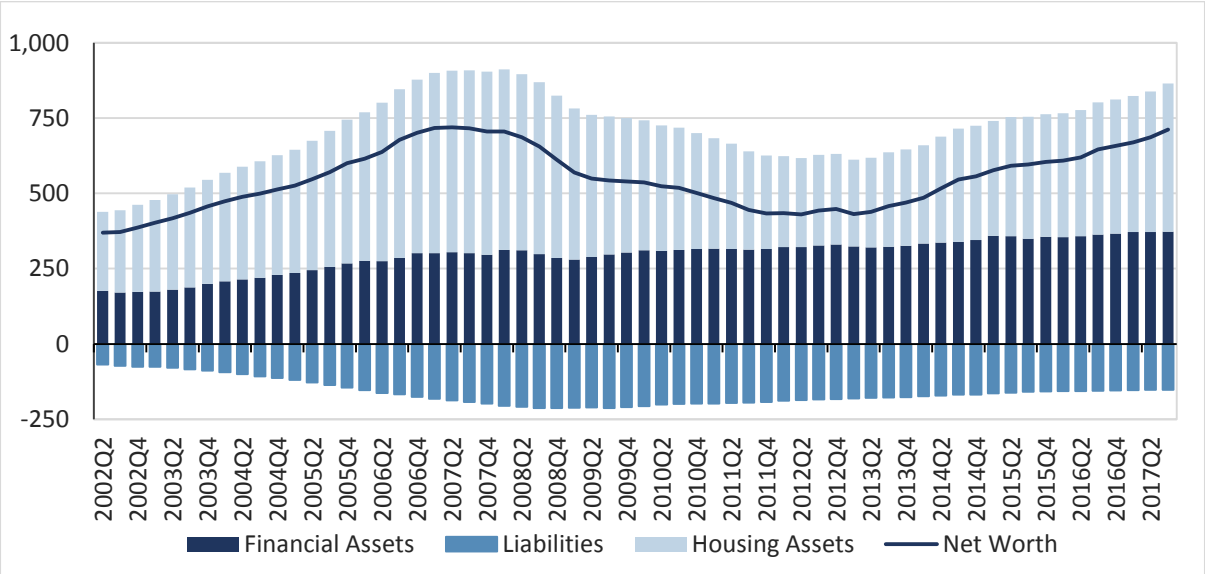
FIGURE 22 ESRI/KBC CONSUMER SENTIMENT INDICATORS



Source: ESRI/KBC.

Irish household net worth continues to grow in Quarter 3, 2017 as loan repayments reduce the stock of outstanding liabilities and rising asset prices raise the total value of domestic balance sheets. The trend in the overall position of Irish households' net worth, which is the stock of financial and housing assets minus the stock of liabilities, is presented in Figure 23. Net worth decreased considerably during the financial crisis as housing assets fell sharply in value. The recovery in the housing market has contributed to a rise in housing wealth which has improved overall net worth. Financial assets have grown modestly since 2010. As households continued to pay down debt balances, the liabilities side is continuing to decline.

FIGURE 23 IRISH HOUSEHOLD NET WORTH (€ BILLION)



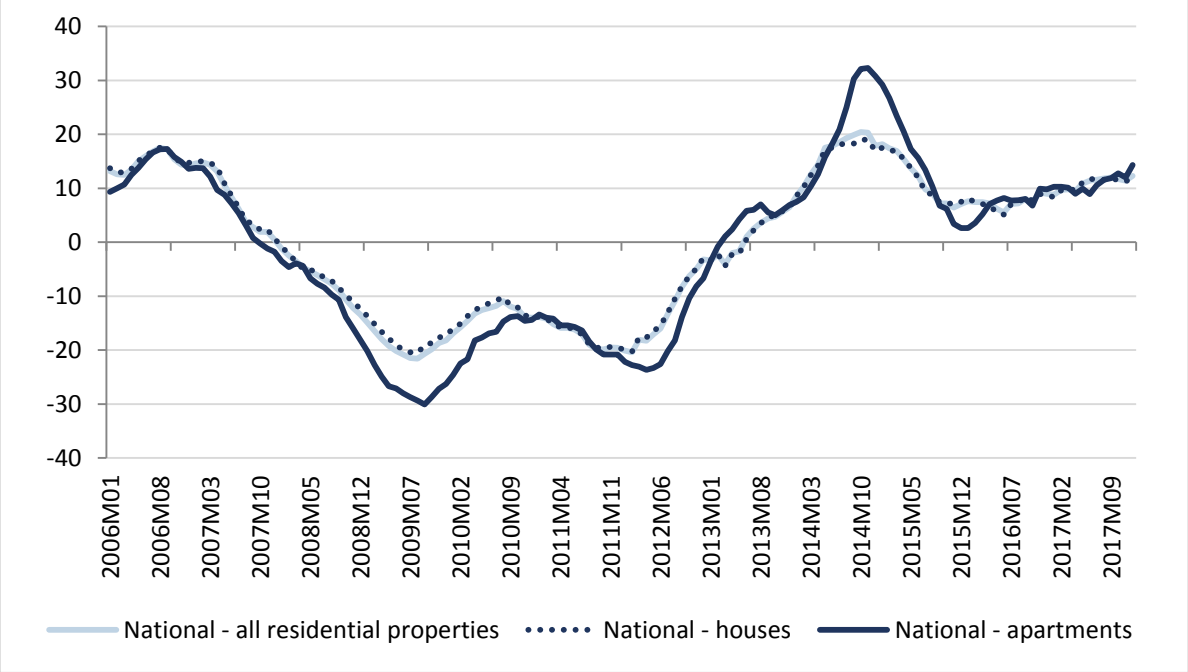
Source: Central Bank of Ireland, Quarterly Financial Accounts.

In summary, household consumption is set to continue benefitting from elevated levels of consumer sentiment and an improved labour market over the next two years. We expect consumption expenditure to grow by 2.4 per cent this year and to grow at a slightly faster pace of 2.5 per cent in 2019.

Property market developments

The rate of increase in national property prices has been accelerating since the second half of 2016, reaching double digit growth rates in May 2017. Figure 24 plots the year-on-year changes in residential property prices by property type. In January 2018 prices increased by 12.5 per cent year-on-year, the fastest growth rate in over two years. This compares with an increase of 9.0 per cent in the year to the end of 2016 and an increase of 8.8 per cent in the year to January 2017. Increased prices can be attributable to several factors including the country's economic recovery and low interest rates, while policy measures such as the government help-to-buy scheme and the loosening of Central Bank lending rules have also increased demand-side pressures in the market. Nevertheless, property prices remain 22.3 per cent lower than the peak reached in May 2007. In the year to January 2018, the price of apartments grew year-on-year by 13.6 per cent.

FIGURE 24 ANNUAL HOUSE PRICE GROWTH (%) BY DWELLING



Source: Central Statistics Office.

House price developments are presented in Figure 25 on a geographic basis splitting out Dublin and the rest of Ireland. It is clear that the deceleration of price growth in Dublin in early 2015 was much more acute than outside the capital. Among other factors, this potentially reflects the fact that the Central Banks' macroprudential rules in the housing market were more tightly binding for borrowers in the Dublin market who needed to use high loan-to-value and loan-to-income ratios to purchase housing. Kinghan et al. (2017) provide some recent evidence of this. Furthermore, the looser loan-to-income cap for first time buyers purchasing properties less than €220,000 would have meant stricter limits in Dublin where average prices were higher. Prices in the rest of the country have been growing sharply, posting double digit growth every month since July 2016 with one exception. The year-on-year growth rates have increased further in January 2018, with Dublin prices growing at 12.6 per cent and prices in the rest of the county increasing by 11.4 per cent. While the growth in house prices in Dublin has remained fairly stable over the past few months, the rate of apartment price growth has accelerated. In the rest of the country, house price growth has increased considerably while apartment price growth appears to have slowed down.

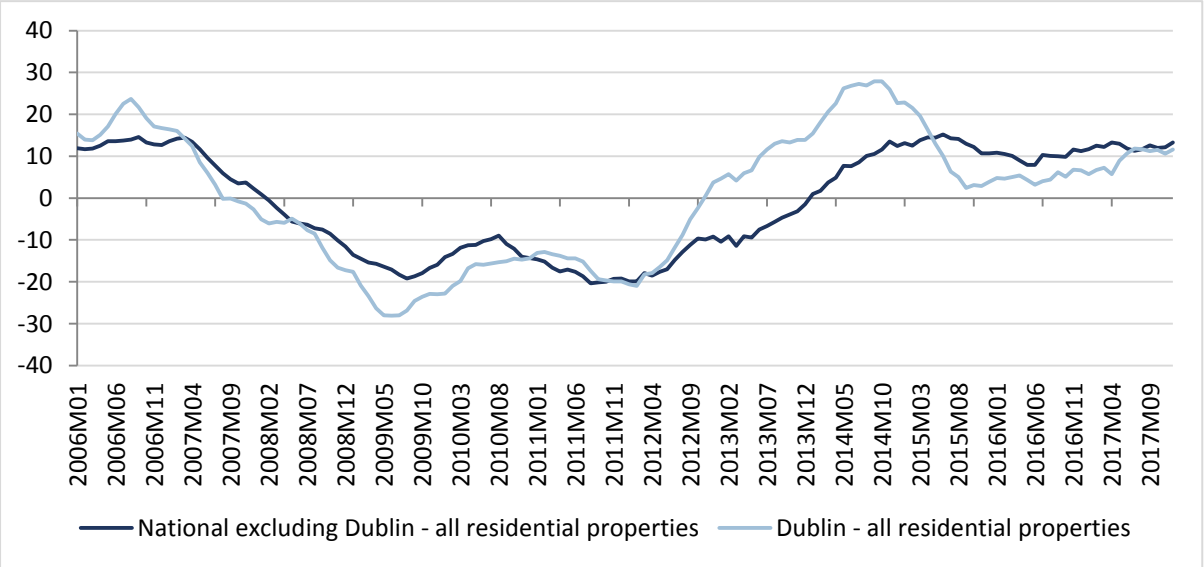
In the 2018 Budget the Irish government announced the introduction of several measures in an effort to tackle the ongoing shortage of housing supply. Some of these measures include a doubling of the proposed vacant site tax levy (from the current 3 per cent to 7 per cent on land not sold by 2019), a new state-run

lending vehicle (Home Building Finance Ireland) which will provide finance at commercially competitive rates to viable developers and increased capital allocation towards social housing.

According to government estimates, the €750 million allocated to the Home Building Finance Ireland has the potential to fund the construction of 6,000 homes. The additional capital allocation of €500 million allocated to the Social Housing programme should enable local authorities and approved housing bodies to deliver approximately 50,000 new social houses by 2021 (3,800 in 2018).[8]

These measures will help alleviate the undersupply of housing in Ireland; however as the supply of social housing has been below the required level over the past four to five years, there is a significant pent-up demand for this type of accommodation.

FIGURE 25 ANNUAL HOUSE PRICE GROWTH (%) BY REGION



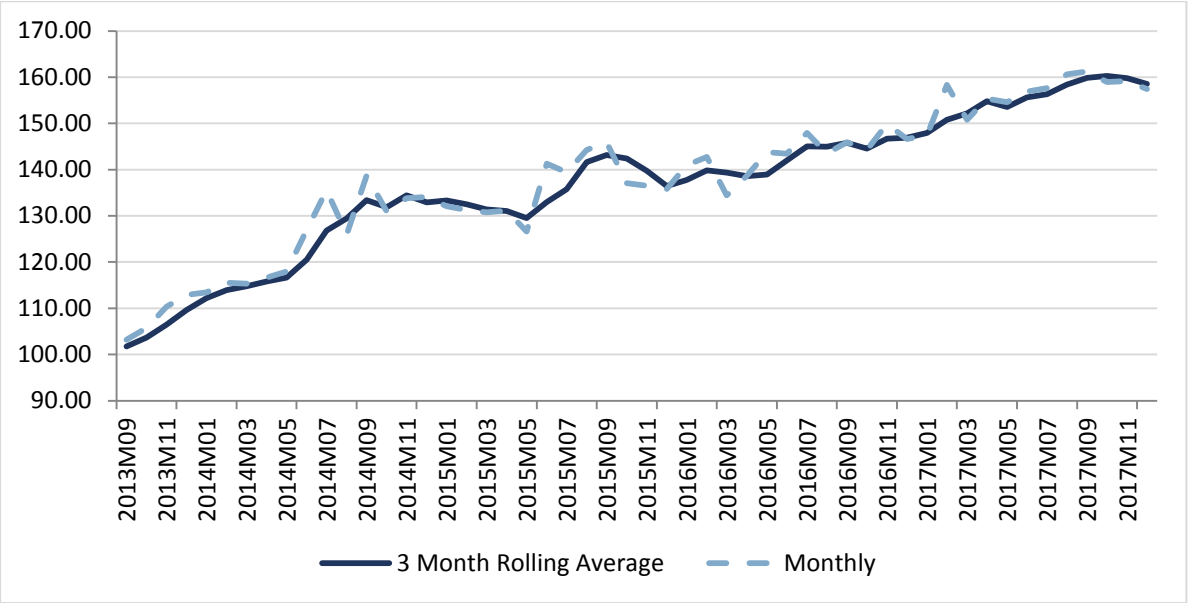
Source: Central Statistics Office.

House price expectations can be gleaned from the ESRI/AIB House Price Index which is presented in Figure 26. The index, which comprises questions on attitudes to buying and selling property as well as expectations of house prices 12 months from now, has started to trend upwards from the mid-point of 2016. This growth continued into Quarter 3 of 2017 while it slowed down in Quarter 4, 2017.

8 See rebuildingireland.ie.

In order to further understand the determinants of house price changes, the ESRI and AIB are reviewing the Housing Index with a view to publishing an improved and revised Index. It is expected that the new Index be published in Q2 2018 covering the Q1 2018 period.

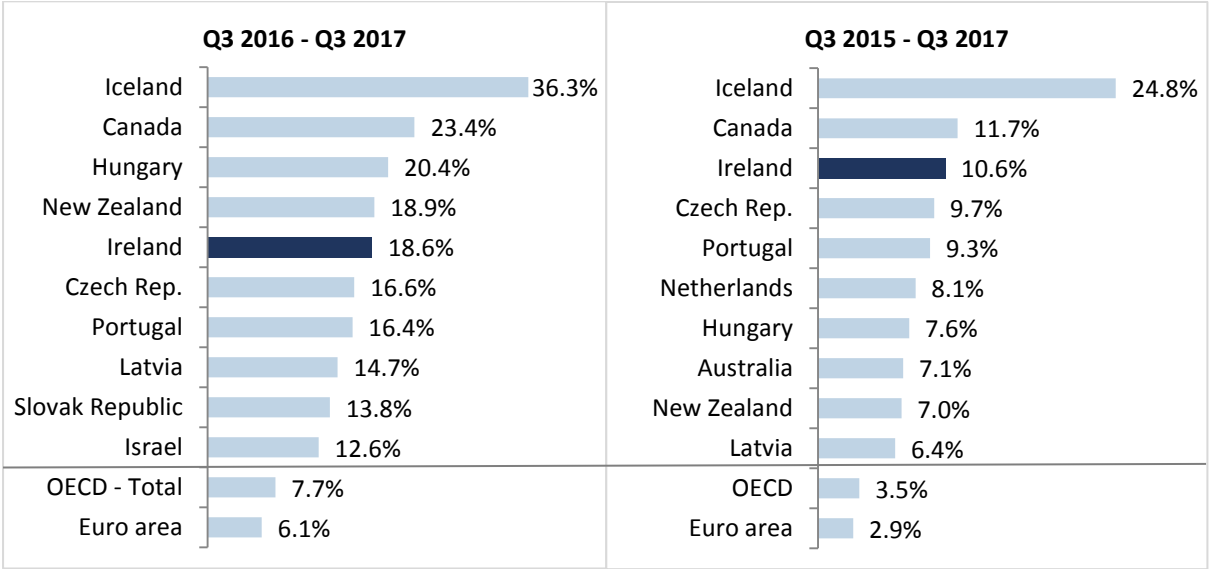
FIGURE 26 ESRI/AIB HOUSE PRICE INDEX (BASE JULY 2013 = 100)



Source: Central Statistics Office.

Irish real house prices rose at the fifth fastest pace among OECD countries in the third quarter of 2017, based on year-on-year growth. According to the OECD House Price Index (Figure 27), real house prices in Ireland grew at 18.6 per cent only being surpassed by Iceland (36.3 per cent), Canada (23.4 per cent), Hungary (20.4 per cent) and New Zealand (18.9 per cent). This is well above the average growth rates for the entire OECD (7.7 per cent) and Euro Area (6.1 per cent) and contrasts with housing market developments in countries such as Turkey (-2.7 per cent), Italy (-1.7 per cent) and Greece (-1.7 per cent).

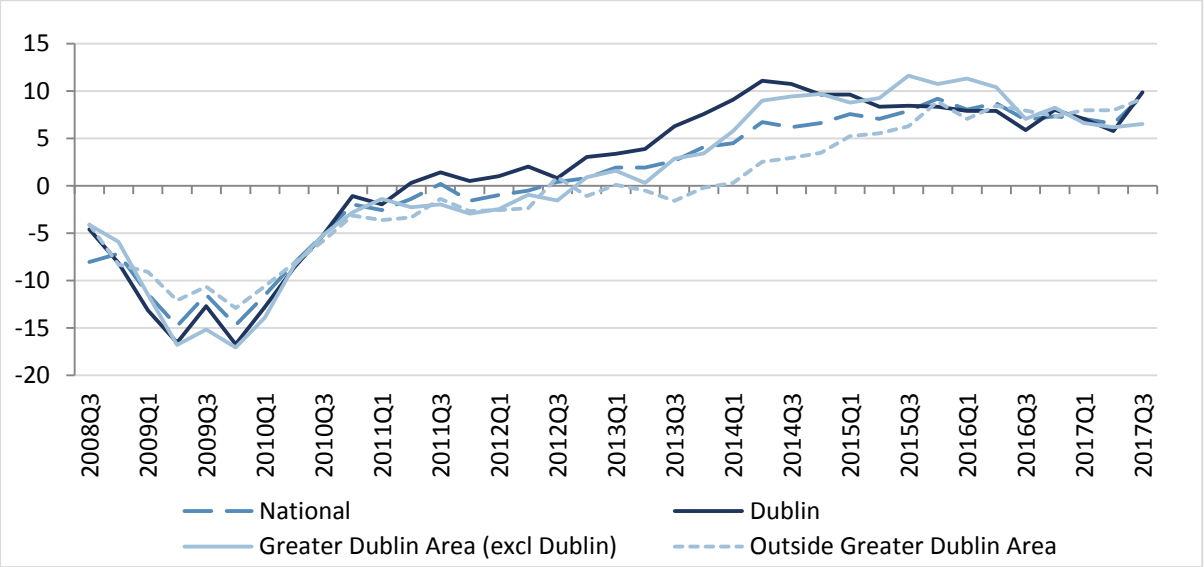
FIGURE 27 OECD TOP TEN FASTEST GROWING HOUSING MARKETS, % GROWTH REAL HOUSE PRICES



Source: OECD Economic Outlook.

National rents in Quarter 3, 2017 increased by 9.5 per cent on an annual basis, continuing the rise that has been observed since early 2013, as can be seen from Figure 28. Rents in Dublin had a steep increase in Quarter 3, 2017 of 9.9 per cent year-on-year, while rents in the Greater Dublin Area (excluding Dublin) and rents outside the Greater Dublin Area grew by 6.5 per cent and 9.2 per cent respectively for the same period. Since mid-2016 rents in Dublin are above the pre-crisis peak experienced in Quarter 4, 2007. As housing supply continues to be below the estimated structural demand, upward pressures in the rental market are expected to continue.

FIGURE 28 RESIDENTIAL TENANCIES BOARD NATIONAL RENTAL INDEX (BASE Q3 2007 = 100), ANNUAL PERCENTAGE CHANGE



Source: Residential Tenancies Board (RTB).

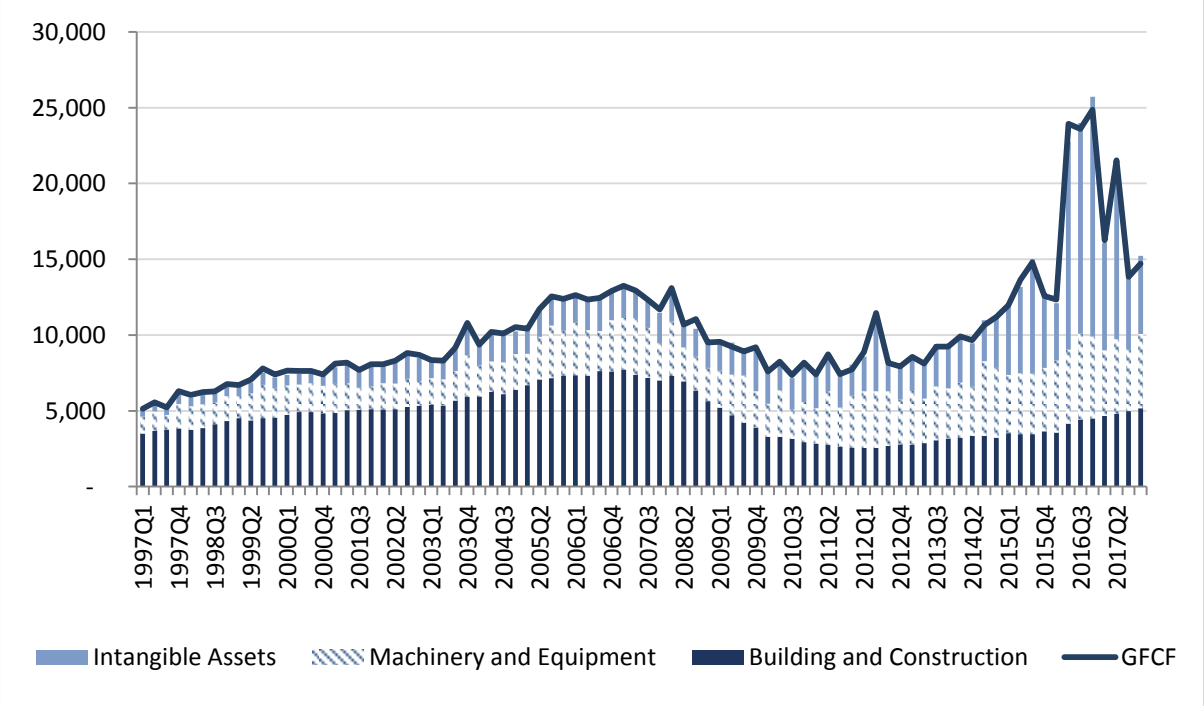
SUPPLY

Investment

Investment activity (Gross Fixed Capital Formation) in the most recent Quarterly National Accounts continues to display severe volatility. For the latest quarterly data available, Q4 2017, total investment increased by 6 per cent on a quarter-on-quarter basis. This followed a quarterly decline of 35 per cent for Q3 2017 and a 32 per cent increase in Q2 2017. Investment in Q4 2017 was 40.1 per cent lower than the level in Q4 2016. The volatility is mainly driven by investment in intangible assets which fell by 67 per cent year-on-year to Q4 2017 but were up 9 per cent quarter-on-quarter.

Investment in machinery and equipment, which normally provides insight into how companies are building capital resources, is also displaying large changes. In Q4 2017, investment in machinery and equipment increased by 19 per cent quarter-on-quarter, having fallen by 16 per cent in the previous quarter. Investment in building and construction remains the single stable source of investment activity; investment in these assets grew by circa 4 per cent in Q3 and Q4 2017.

FIGURE 29 COMPONENTS OF INVESTMENT AS A PROPORTION OF TOTAL (€ MILLION)



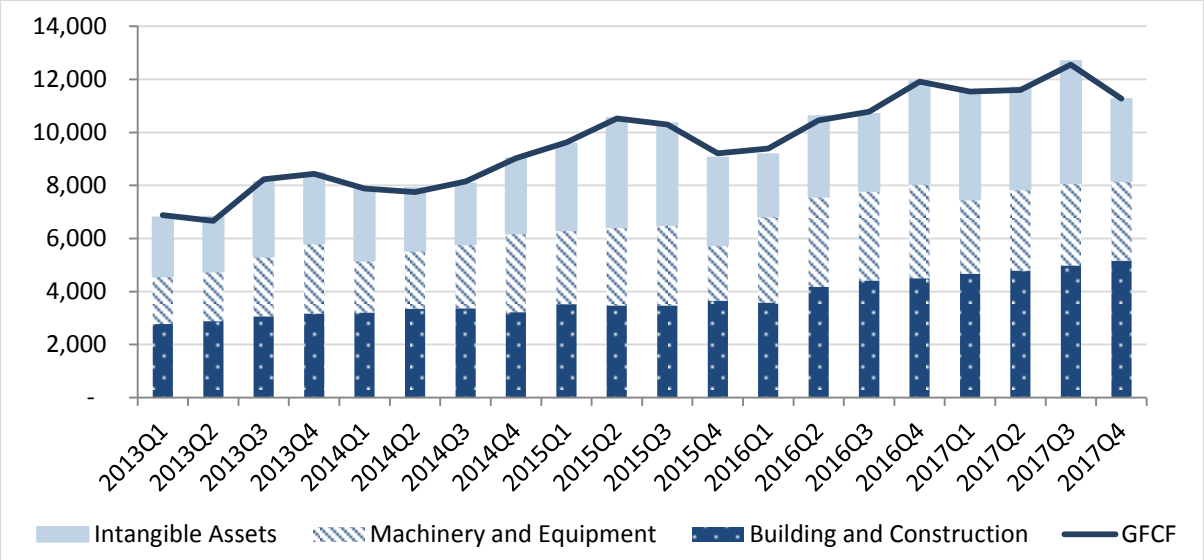
Sources: Central Statistics Office, Quarterly National Accounts Data (Table Annex 2B and 3B) – Chain linked annually and referenced to year 2015.

Such extreme fluctuations in aggregate investment are caused by the globalised nature of the Irish economy and the impact of multinational company activities. However, this poses a particular challenge to policymakers and researchers looking to understand the drivers of investment as well as understanding what capital assets are available to produce output in Ireland.

As previously indicated, the CSO now provides an adjusted series for Gross Fixed Capital Formation on a quarterly basis, modified GFCF, which adjusts for the effects of trade in aircraft by aircraft leasing companies and the importation of intellectual property. The adjusted figures overall and for building and construction, intangibles and machinery and equipment are presented in Figure 30.

The adjusted data display a more normalised growth pattern with an upward trend evident from mid-2015 onwards. However, in the most recent period the growth rate reversed dramatically. Overall modified investment fell by approximately 6 per cent quarter-on-quarter as of Q4 2017. Intangible assets (excluding R&D related components) fell by 20 per cent quarter-on-quarter, while machinery and equipment (excluding aircraft leasing) fell by 16 per cent for the same period.

FIGURE 30 MODIFIED GROSS DOMESTIC CAPITAL FORMATION (€ MILLION)



Source: Central Statistics Office, Quarterly National Accounts Data, Release Annex Table 4E.

Therefore, there is a still a challenge in measuring and understanding investment by domestic firms whose plans and patterns are most aligned to developments in the domestic economy, in particular domestic SMEs. A recent proposal by the CSO to provide figures excluding some of the large multinationals in national

accounting terms is very welcome. However, given the fact that many foreign owned-firms in Ireland have a small number of employees (for example brass plate companies), any new data must ensure that an investment series accurately captures decisions by real productive firms in the domestic economy. No current data series exists that can accurately measure investment by domestic SMEs. Indeed, recent research by Lawless et al. (2018) would suggest that domestic SMEs are underinvesting at present. [9] For example, consider the data below taken from the CSO Census of Industrial Production which profiles investment across firm sizes for industrial companies.

TABLE 4 ADDITIONS TO CAPITAL ASSETS – TOTAL (€ '000) BY PERSONS ENGAGED AND YEAR

	2011	2012	2013	2014	2015
0-9	203,137	300,842	1,087,851	928,392	337,205
10-49	380,580	251,770	386,112	452,327	24,900,982
50-249	908,002	1,057,201	806,604	905,901	1,996,635
250 and over	4,211,731	4,447,978	5,485,614	7,382,312	8,773,512

Source: CSO Census of Industrial Production.

It can be seen that between 2014 and 2015, additions to capital assets (investment) increased from approximately €0.5 billion to €24.9 billion in 2015, for companies with 10-49 employees. Clearly, such a dramatic increase in the value of capital assets is unlikely to be reflective of real underlying activity in the Irish economy. This indicates that merely controlling for employee numbers is not sufficient grounds for removing distorting, multinational-related activity from the National Accounts.

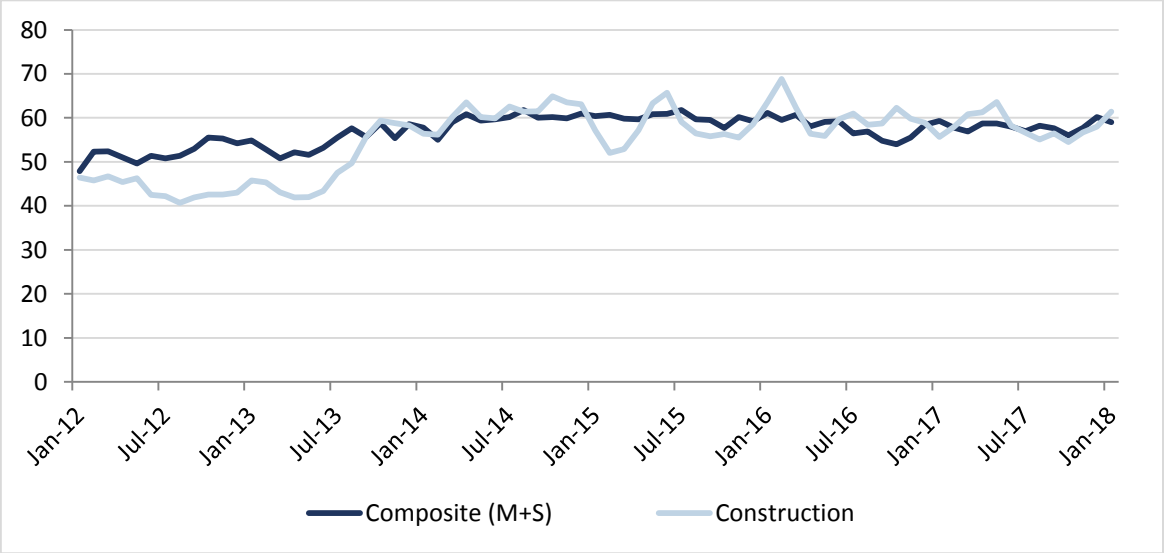
Therefore, any resulting series which purports to accurately reflect the scale of underlying investment in the Irish economy must be based on information from enterprises which exclude the types of brass-plated firms mentioned above.

To capture the more current expectations of enterprises in relation to their investment plans, the Markit Purchasing Manager's Index provides another indicator of activity in the manufacturing, services and construction sectors. It is shown in Figure 31. A reading above 50 indicates an expansion and, in the first few months of 2017, we can see that the index is beginning to trend upwards for construction and remains well above 50 for manufacturing and services. The most recent data for January 2018 suggest the construction sector is growing quickly and has a more bullish outlook. While manufacturing and services firms posted

[9] Lawless, M., C. O'Toole and R. Slaymaker, 2018. 'Estimating an SME investment gap and the contribution of financing frictions', ESRI Working Paper series, Series Number 589.

positive expectations towards the end of 2017, this expectation is somewhat more muted in January 2018.

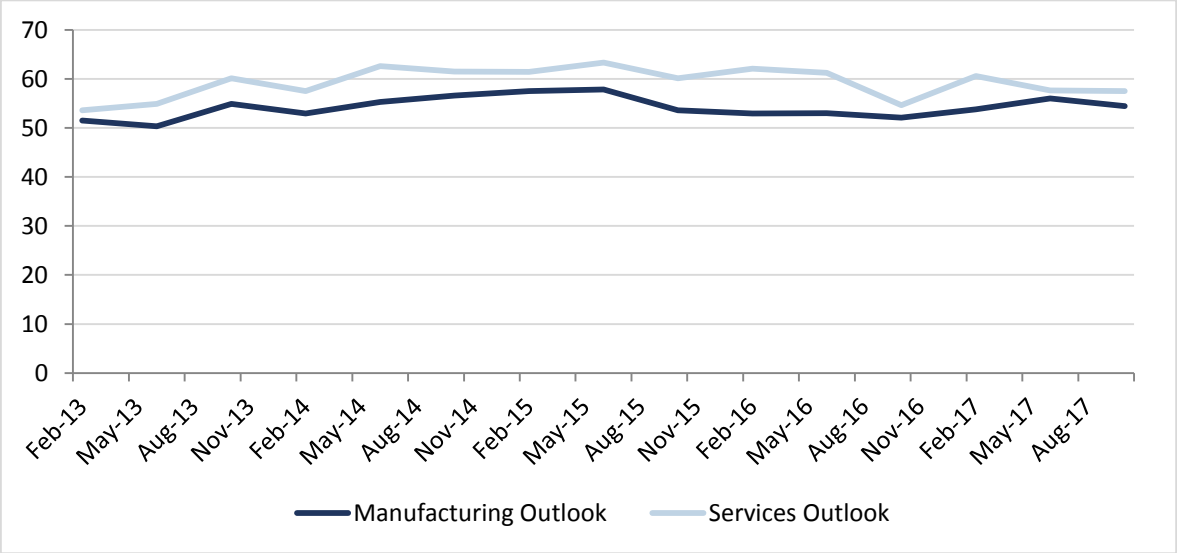
FIGURE 31 BUSINESS AND CONSTRUCTION PMI FOR IRELAND



Source: Markit.

For both manufacturing and services activity the most recent October 2017 data for purchasing activity indicate a softening, and levelling out, of forward looking purchasing behaviour.

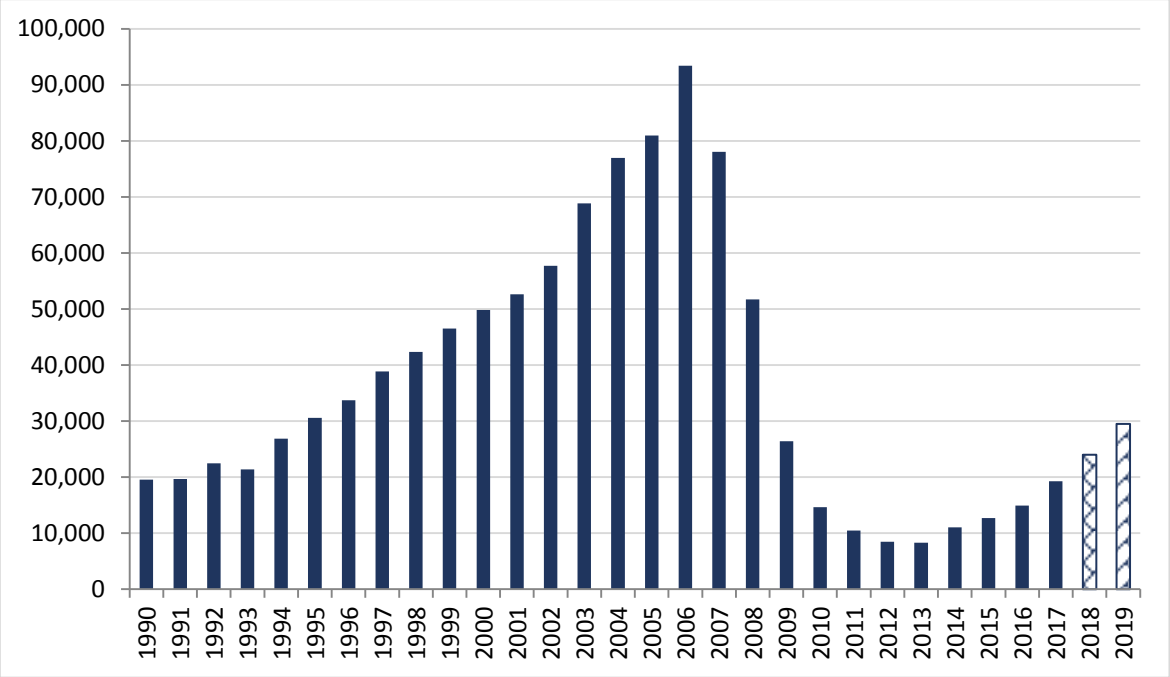
FIGURE 32 FORWARD LOOKING INDICATORS FOR PURCHASING ACTIVITY



Source: Markit.

The quarterly National Accounts point to a continued expansion of investment activity in construction. Underpinned by strong housing demand and a supportive policy context, we expect housing completions to grow strongly this year. We expect housing completions (as measured by electricity connections) to be approximately 19,271 units for 2017, broadly in line with our forecasts. For 2018, we forecast an increase to 24,000 units, growing again to 29,500 in 2019.

FIGURE 33 ANNUAL HOUSING COMPLETIONS (2018-2019 FORECASTS) – TO 2017 ACTUAL



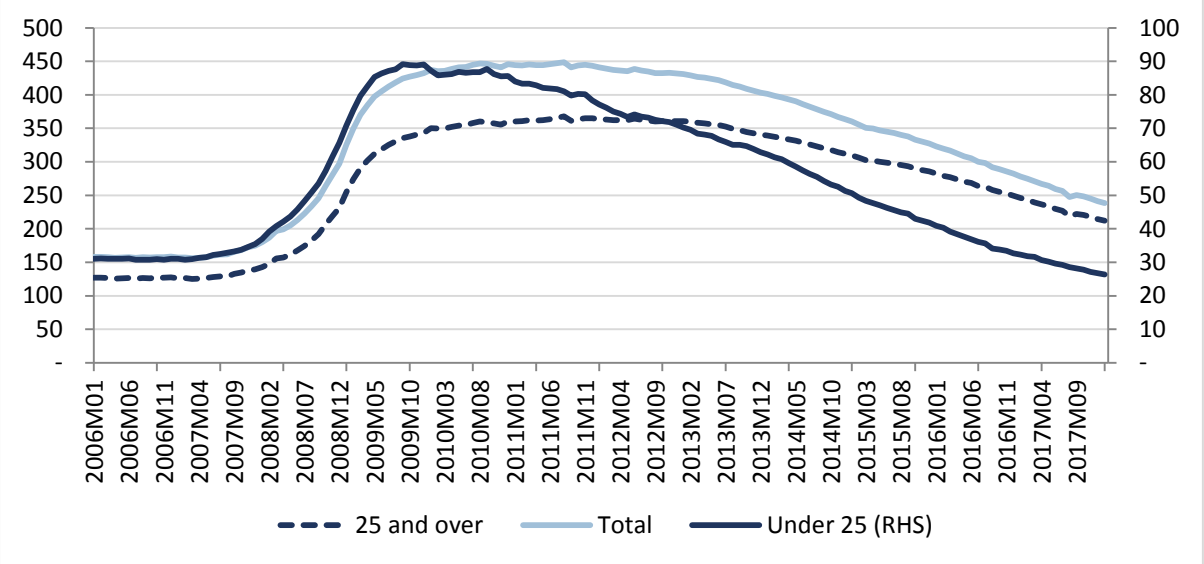
Source: Department of Environment and *QEC* Forecasts.

LABOUR MARKET

Unemployment

Given the continuing strong performance of the Irish economy in 2017, the number of people out of work continued to decline throughout the year. On a seasonally-adjusted basis the Live Register recorded a monthly decrease of 3,500 (-1.4 per cent) in December 2017, resulting in a seasonally-adjusted total of 241,000 people out of work. This represents an annual decrease of 40,800 (-14.5 per cent). Initial figures for 2018 show the positive trends continuing for the labour market. In January 2018 the number of people out of work was reduced further by 3,000 (-1.2 per cent) relative to December 2017. As can be seen from Figure 34, the number of persons on the Live Register in January 2018 (238,400) is still above the 2007 lowest level (156,300) but well below the 2011 peak (448,700).

FIGURE 34 NUMBERS ON THE LIVE REGISTER ('000) BY AGE: MONTH 1, 2006 TO MONTH 1, 2018



Source: Central Statistics Office.

The share of long-term unemployed represented 41.3 per cent of total unemployment in January 2018 compared to 43.1 per cent in January 2017. While short-term unemployment had the largest decline in the Live Register during the initial phase of the economic recovery, since mid-2015 long-term unemployment is registering the largest reduction. On a yearly basis, long-term unemployment fell by 17.8 per cent in January 2018 and short-term unemployment fell by 11.6 per cent.

In terms of the last occupation held by those on the Live Register, Table 5 summarises the annual change between 2017 and 2018.

TABLE 5 PERSONS ('000) ON THE LIVE REGISTER CLASSIFIED BY LAST HELD OCCUPATION

Sector	M01 2017	M01 2018	% Change
Managers and administrators	13.1	11.6	-11.3
Professional	16.0	14.0	-13.0
Associate professional and technical	8.6	7.7	-10.2
Clerical and secretarial	27.9	24.7	-11.5
Craft and related	50.6	42.0	-17.0
Personal and protective services	36.8	32.2	-12.7
Sales	29.2	24.3	-16.7
Plant and machine operatives	44.5	37.3	-16.0
Other broad occupational groups	33.3	29.2	-12.2
No occupation	16.9	14.3	-15.0

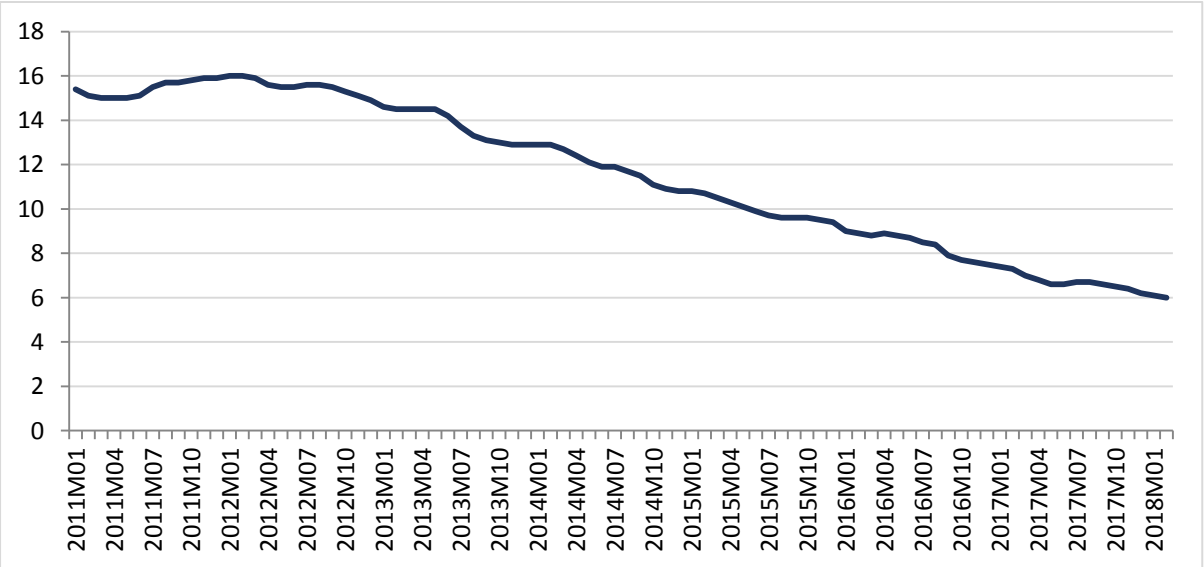
Source: Central Statistics Office.

Notwithstanding the recent pick-up in the construction sector, the occupational group with the largest number of people on the Live Register is still the craft and related sectors. However, this sector did register the largest decrease over the past year.

In Quarter 2, 2017 the CSO discontinued the Quarterly National Household Survey (QNHS) and in Quarter 3, 2017 introduced the new Labour Force Survey (LFS), a redesigned questionnaire with enhancements to the survey methodology. Furthermore, the CSO also updated the labour market data to incorporate the results from the most recent Census 2016. The working-age population estimate for Q2 2016 based on the Census 2011 was 3.64 million while the new figure based on Census 2016 is 3.73 million. As a consequence of these changes, several statistics were revised in the January 2018 LFS publication, while there has been a delay in the publication of other labour related statistics. Overall, historic estimates of the labour force, employment and unemployment were revised upwards in the LFS when compared with similar statistics from the QNHS.

The LFS data adjustment resulted in an upward revision of the unemployment rate of about 0.4 to 0.5 percentage points. According to the new data, the seasonally-adjusted unemployment rate at the end of 2017 was 6.2 per cent. This compares with a revised rate of 7.5 in December 2016. In 2018, on a month-to-month basis, the seasonally-adjusted unemployment rate fell to 6.1 per cent in January and to 6.0 per cent in February 2018. The figure is down from 7.3 per cent in February 2017.

FIGURE 35 SEASONALLY-ADJUSTED UNEMPLOYMENT RATE BY MONTH (%)



Source: Labour Force Survey, Central Statistics Office.

Employment

The seasonally-adjusted figures for employment in the Irish economy continue to increase with 66,800 jobs being added in the year to the fourth quarter of 2017 (+3.1 per cent), bringing the number of persons in employment to 2,231,000. The largest year-on-year growth rates were recorded in the administrative and support service activities (+15.0 per cent), construction (+9.5 per cent) and the accommodation and food service activities (+8.7 per cent) sectors.

After a period of continued growth, employment in the Irish economy is approaching its previous 2007 peak level (2,228,700). Nevertheless, there has been a change in the composition of employment since the boom years. Employment in the construction sector remains 42.6 per cent below its peak level and employment in the information and communication sector is up by 33.1 per cent over the same period. Employment in administrative and support services was also particularly hit by the crisis and still remains significantly below its peak level. Employment in education services, on the other hand, seems to have grown significantly over the past years.

Overall, the Irish economy seems to be moving in the direction of full employment. Nonetheless, to meet the growing demand for commercial and residential property, employment in the construction sector will need to increase somewhat over the medium term. Migration inflows from other EU countries are likely to be an important source of future labour supply in the Irish economy.

TABLE 6 PERSON AGED 15 YEARS AND OVER IN EMPLOYMENT ('000), NACE REV 2 ECONOMIC SECTOR, SEASONALLY ADJUSTED

	Q4 2007	Q4 2017	Q4 2007 – Q4 2017 %
Agriculture, forestry and fishing	**116.2**	**113.7**	**-2.2**
Industry and Construction	**533.6**	**417.5**	**-21.8**
Industry	300.4	283.7	-5.6
Construction	233.2	133.8	-42.6
Services	**1,578.9**	**1,684.5**	**6.7**
Accommodation and food service	141.9	168.0	18.4
Information and communication	86.9	115.7	33.1
Administrative and support	103.6	98.0	-5.4
Education	136.3	164.8	20.9
Other	1,110.2	1,138.0	2.5
Not stated	8.5	9.4	10.6
Total	2,228.7	2,215.7	-0.6

Sources: Labour Force Survey, Central Statistics Office.

Another sign that the economy is continuing to perform strongly is that more workers are moving from part-time to full-time employment. In the fourth quarter of 2017, full-time (non-seasonally-adjusted) employment increased by 90,100 (+5.4 per cent) year-on-year to 1,770,100. Full-time employment now accounts for 81.2 per cent of total employment, this compares with 81.3 per cent in the 2007 peak and 74.8 per cent in the 2012 downturn. On the other hand, part-time employment fell by 23,300 (-4.8 per cent) to 460,900 and accounts for 20.7 per cent of total employment.

The shift in the structure of the Irish labour market can also be observed in changes in the educational attainment level of those in employment, as displayed in Table 7. A clear pattern is evident with the proportion of people with third-level education increasing significantly while the share of those with lower secondary education or below decreasing over the past decade (proportions in terms of labour force participation are fairly similar).

TABLE 7 PERSON AGED 15 YEARS AND OVER IN EMPLOYMENT BY LEVEL OF EDUCATION, APPROXIMATE PERCENTAGE OF TOTAL EMPLOYMENT

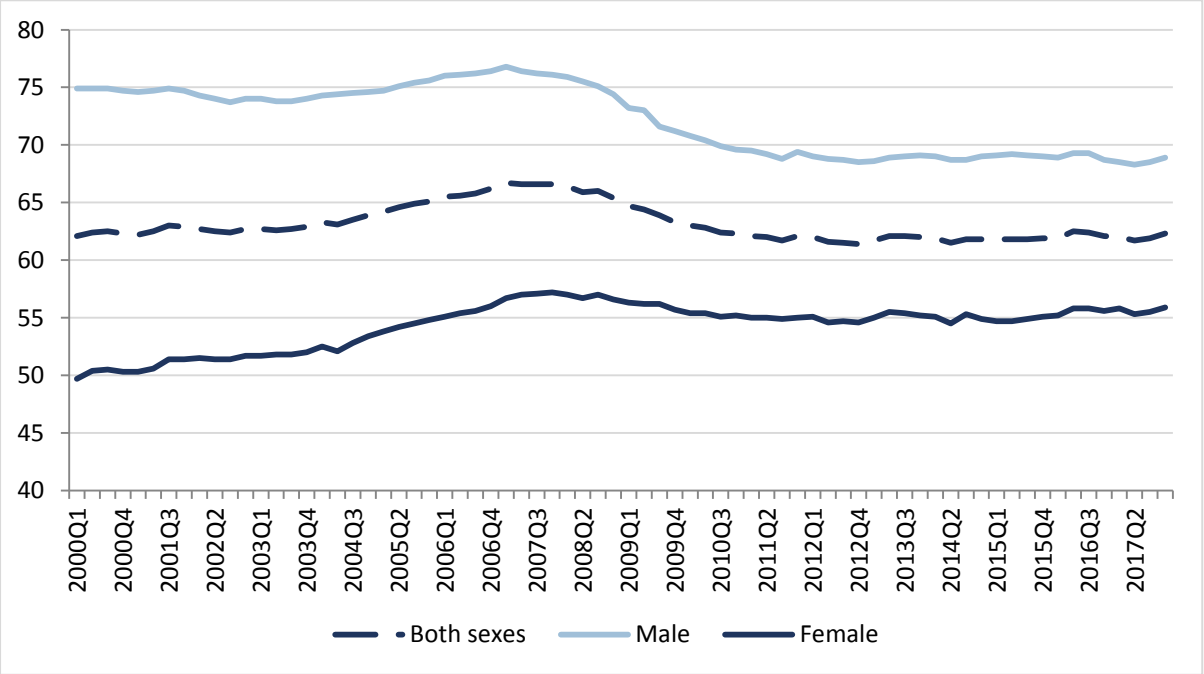
	2003	2007	2017
Lower secondary or below	28.0	23.5	12.3
Upper secondary	27.6	27.7	23.9
Post-secondary non-tertiary	12.2	10.8	13.2
Third-level non-honours degree	11.2	11.3	18.2
Third-level honours degree or higher	18.8	22.9	29.2
Other	2.1	3.8	3.3

Sources: QNHS, Central Statistics Office.
Note: There was a break in the QNHS statistics in Q1 2014, therefore these percentages represent an approximation.

Despite the recovery of the Irish economy and the improved performance of the labour market, the labour market participation rate remains below its 2007 peak level. The overall seasonally-adjusted participation rate in the fourth quarter of 2017 is at 62.3 per cent, 4.4 percentage points lower than in the first quarter of 2007. In fact, the overall participation rate has remained broadly flat since 2011 and is at the same level as the participation rate in the early 2000s. Male participation rates, in particular, seem not to have recovered (68.9 per cent in Q4 2017), and remain 7.9 percentage points below the peak in the first quarter of 2007. Despite being 0.8 percentage points below the 2007 peak, female participation rates in the fourth quarter of 2017 (55.9 per cent) are 6.2 percentage points above the participation rates in the first quarter of 2000 (49.7 per cent). Although male participation rates remain well above female rates, they have followed different trends since the beginning of the century. The upward pattern in female participation rates is associated with a fall in the proportion of females engaged exclusively in home duties, which are not considered in the

labour force statistics. Furthermore, the rising levels of educational attainment are also likely to be associated with the increase in female labour force participation.

FIGURE 36 SEASONALLY-ADJUSTED PARTICIPATION RATES, 15 YEARS AND OVER (%)



Source: Central Statistics Office.

A growing share of young people enrolled in third-level education and a slightly greater proportion of retirees might have contributed to a fall in the labour force. However, there still seems to be some potential for an increase in labour force participation as the economy continues to expand.

Labour market forecasts

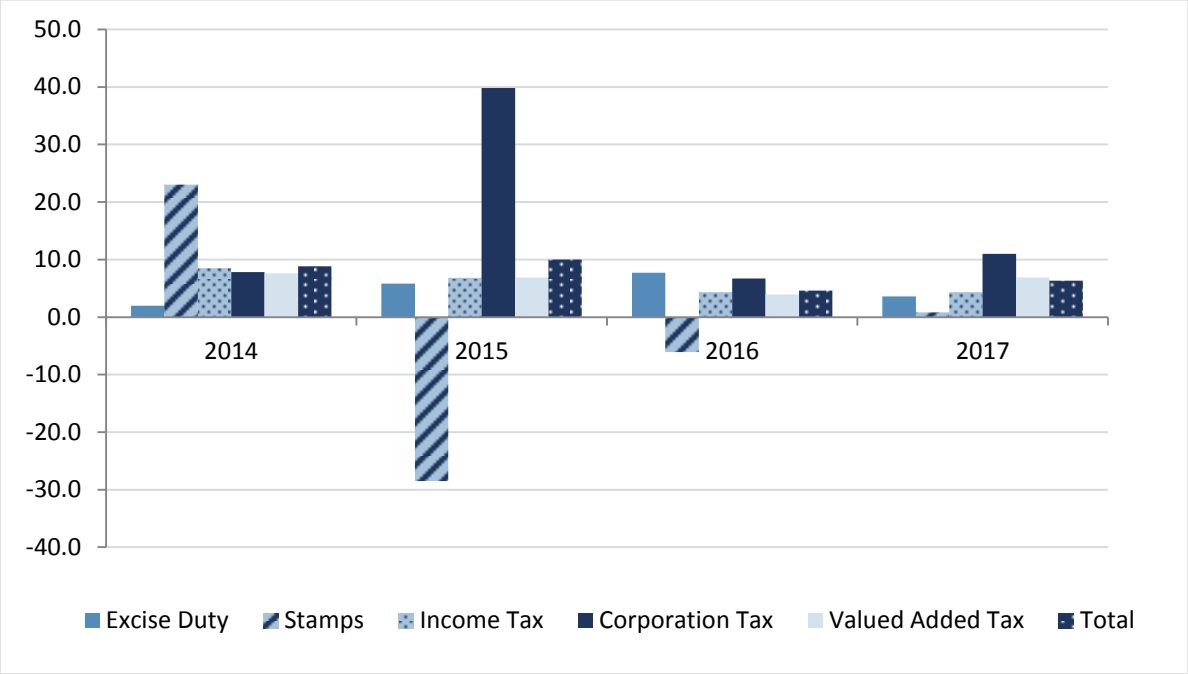
The continuing strong performance of the Irish economy and the recovery of the construction sector should contribute to a further reduction in the unemployment rate. Given the latest review of the CSO labour market figures, we believe that the unemployment rate will average 5.4 per cent through 2018 and 4.5 per cent through 2019. Employment is set to exceed 2.27 million by the end of 2018 and increase to 2.30 million by the end of 2019.

PUBLIC FINANCES

2017 saw Irish taxation receipts in total increase by over 6 per cent. This came on top of annual increases in 2014, 2015 and 2016 of 9, 10 and 4 per cent

respectively. Figure 37 illustrates the annual changes in taxation returns for the last four years for the main tax categories as well as the overall total amount.

FIGURE 37 ANNUAL CHANGES IN MAJOR TAX SUB-COMPONENTS (%)

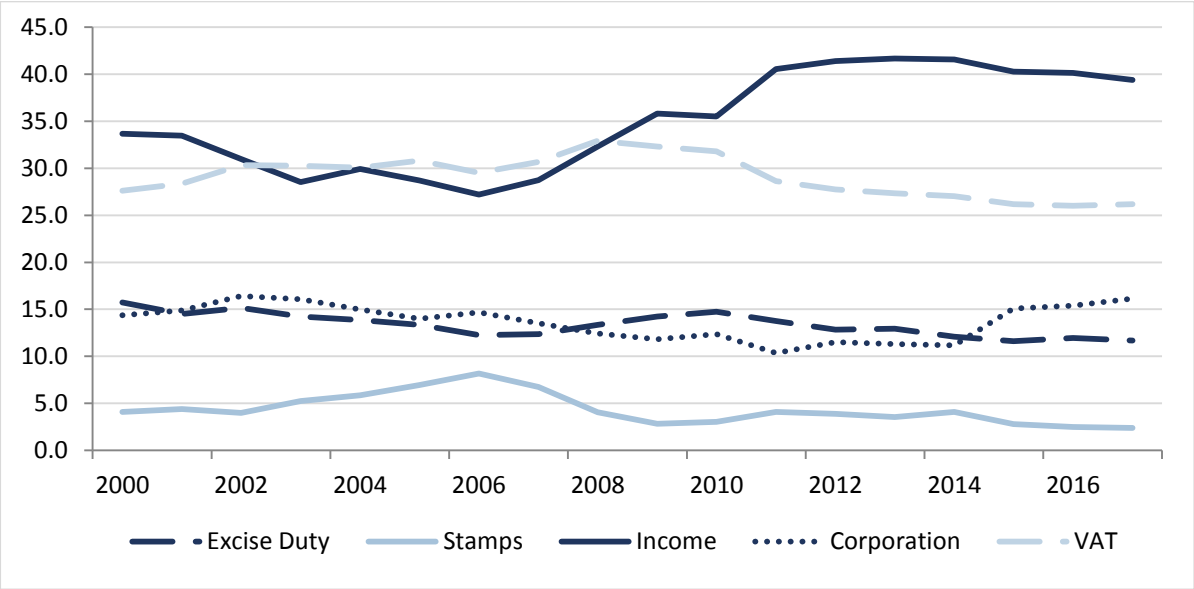


Source: *QEC* calculations.

VAT receipts registered strong increases in 2017 at 7 per cent, which followed an increase of almost 4 per cent in 2016. This coupled with the consistent increases in pay related social insurance (PRSI) of 3.5 per cent in both 2016 and 2017, which implies increases in disposable incomes, illustrates the importance of domestic consumption to the present economic performance.

Given developments in Irish public finances it is timely again to look at the composition of taxation receipts. In Figure 38, the contribution of different taxation items to overall receipts is plotted for the period 2000 to 2017.

FIGURE 38 CONTRIBUTION OF DIFFERENT TAXATION AGGREGATES TO OVERALL RECEIPTS (%)



Source: *QEC* calculations.

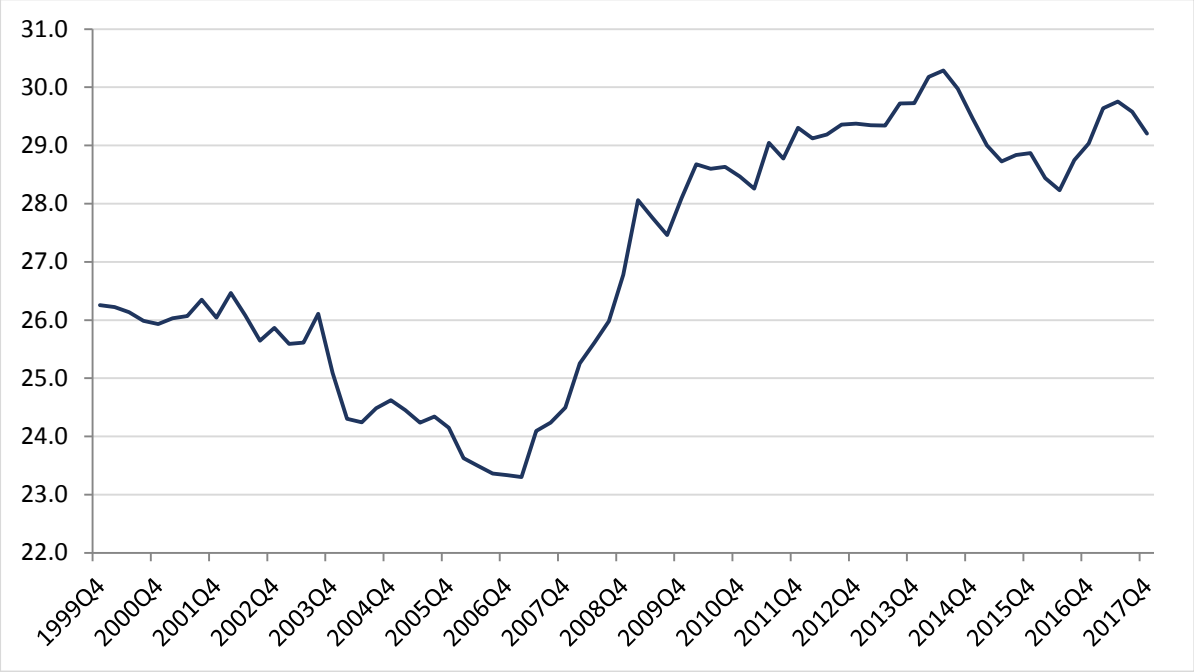
A number of trends are evident from the graph; first in the run up to 2007, income tax, excise duty and corporation tax all experienced declines in their contribution to overall receipts. However, since then, income tax and more recently corporation tax's share of receipts have increased quite significantly. From Figures 39 and 40, it would appear that the taxation base has become more concentrated and more volatile.[10] However, this is because taxation receipts are increasingly coming from income taxation, which is a relatively stable source of revenue. While the taxation base prior to 2007 may have been more diversified, some of the taxation headings such as stamps and VAT were very much associated with receipts from the housing sector, which ultimately proved to be quite unstable. Therefore, post-2008, an increasing proportion of taxation revenues are coming from a smaller number of sources (such as income tax), which are relatively more stable.

What this suggests is that relying purely on standard metrics to assess the stability or otherwise of a country's tax base may not always reveal the true underlying situation. As noted in Addison Smyth and McQuinn (2016; 2010),[11] to get a more comprehensive assessment of stability, the individual taxation aggregates should be examined in terms of their underlying determinants.

[10] The Herfindahl Index is a standard measure of concentration, in this case highlighting how concentrated total tax revenue has become with respect to income tax. As the index falls, sources of tax revenue become more diversified and hence less prone to major volatility as a result of specific risks linked to particular tax components.

[11] Addison Smyth, D. and K. McQuinn, 2016. 'Assessing the sustainable nature of housing-related taxation receipts: the case of Ireland', *Journal of European Real Estate Research*, Vol. 9 (2), pp. 193-214.
Addison Smyth, D. and K. McQuinn, 2010. 'Quantifying revenue windfalls from the Irish housing market, *The Economic and Social Review*, Vol. 41 (2), pp. 201-223.

FIGURE 39 HERFINDAHL INDEX OF IRISH TAXATION AGGREGATES



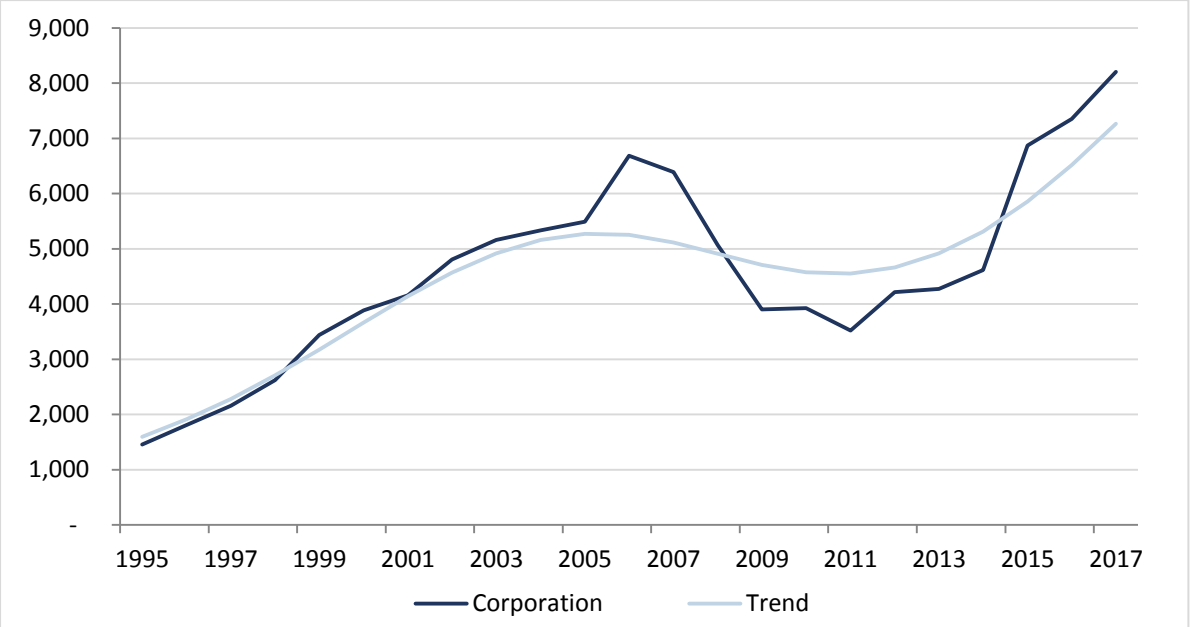
Source: *QEC* calculations.

FIGURE 40 COEFFICIENT OF VARIATION OF IRISH TAXATION AGGREGATES

Source: *QEC* calculations.

One issue of concern in terms of recent taxation developments is the increase in corporation tax receipts. Given the issues with the National Accounts and the implications of large transactions by a relatively small number of multinationals, the concern is that all of the recent, strong increase in corporation tax receipts may not be sustainable. The concern is further reinforced by the latest analysis from the Revenue Commissioners (Tancred, 2017)[12] which indicates that in 2016, just ten firms accounted for almost 40 per cent of the total corporation tax take. In the absence of individual firm data, it is very difficult to assess the stability or otherwise of such developments. In Figure 41, corporation tax receipts and a HP filtered series are plotted over the period 1995 to 2017 – the HP filtered series is used to proxy for a long-run average value of receipts. The graph suggests that recent increases constitute a return to the very strong growth rates experienced in corporation taxes over the period 1995-2007. Corporation taxes fell during the period of the international financial downturn; however, since 2015 they have been increasing at a significant pace and in line with long-run trends.

FIGURE 41 CORPORATION TAX RECEIPTS: 1995 – 2017 (€000 MILLION)



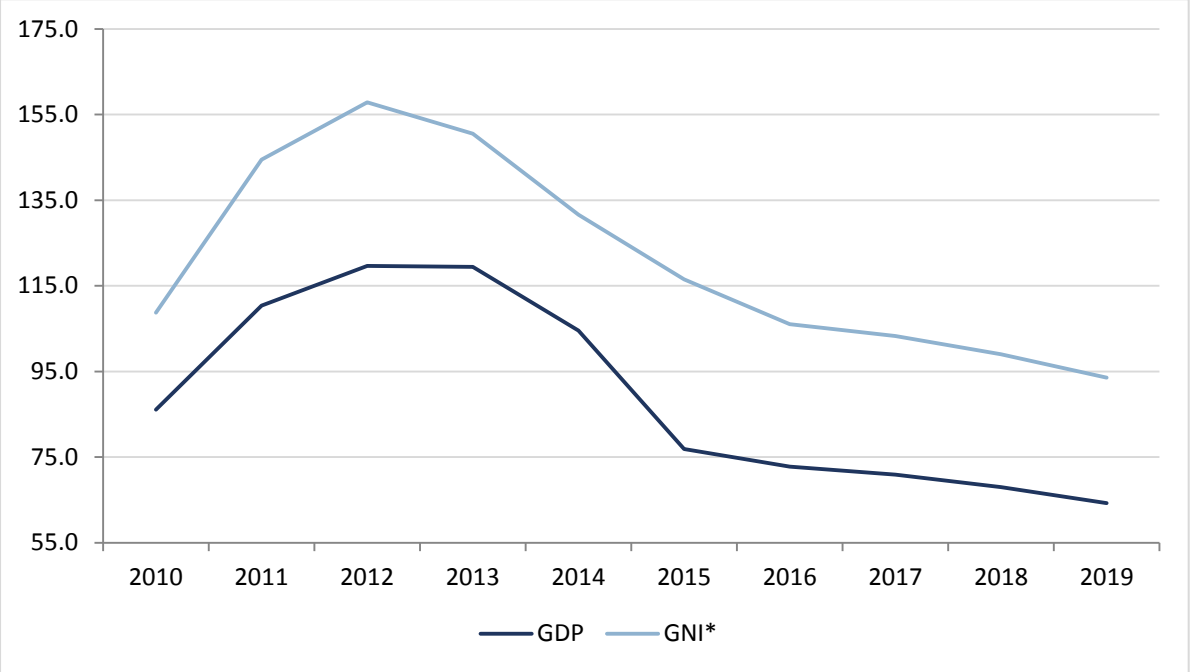
Source: *QEC* calculations.

One particular source of uncertainty concerning corporation tax receipts is recent proposed changes in US tax legislation. New potential changes mean that it is less attractive for US firms to locate valuable intellectual property assets in countries outside of the US, as these assets are now more likely to be subject to US tax rates. This move accompanies the recent proposal to reduce the US corporation tax rate from 35 to 20 per cent.

[12] Tancred, P., 2017. 'An Analysis of 2015 Corporation Tax Returns and 2016 Payments', Office of the Revenue Commissioners, Statistics and Economic Research Branch, April 2017.

Due to the strong increases in taxation revenues experienced particularly during the latter course of 2017, we now expect a mild deficit of -0.3 per cent in 2017. Our forecasts suggest that the public finances will experience a surplus of 0.2 and 0.6 per cent in 2018 and 2019, respectively.

FIGURE 42 DEBT-TO-GDP AND GNI*RATIOS (%)



Source: *QEC* calculations.

Figure 42 presents the debt-to-output ratio for both GDP and the new GNI* measure. While both trends indicate that Ireland's debt sustainability is clearly improving, a significant difference in the two ratios is evident due to the difference in the GDP and GNI* output denominators.

General Assessment

As we move into the first quarter of 2018 the Irish economy continues to show signs of strong momentum; the unemployment rate is now below 6 per cent and overall taxation receipts in the economy continue to grow on top of significant increases in previous years. While underlying concerns about the UK economy still persist, in general, the performance of the Irish economy's main trading partners suggests strong external demand for domestically produced goods and services. This, allied with persistent increases in consumption and underlying investment, indicates another robust performance by the Irish economy is likely in 2018. Our initial estimates for growth in 2019 suggest the Irish economy will grow at a significant rate for the seventh year in a row, indicating that in terms of the headline variables, the economy will have recovered from the post-2007/2008 international financial downturn. It is increasingly clear that the main macroeconomic policy challenge over the coming 18 months will be to ensure that the growth enjoyed by the economy is sustainable over the medium term. This will almost certainly entail the relevant authorities displaying restraint in terms of both fiscal and macroprudential policy.

It now seems apparent that in 2017 the global economy grew at its fastest pace in six years. Loose monetary conditions are now sustaining business activity, while the lingering impact from budget austerity is dissipating. Both the US and China registered stronger than expected growth towards the end of 2017 while the Euro Area registered the strongest annual growth in over six years in the same quarter. European growth is now benefitting from a healthy labour market, dynamic exports and loose monetary policy. Concerns about the UK economy persist into 2018; overall there are mixed messages with consumer and business sentiment subdued while the labour market continues to see relatively low rates of unemployment. Most commentators feel that growth will moderate this year, particularly as investment continues to be adversely impacted by uncertainty due to Brexit. Agreeing swiftly on a transition period will be vital to providing certainty to firms and safeguarding investment in the UK. As noted previously, any protracted slowdown in the UK economy will have direct, negative implications domestically.

The upbeat assessment of the domestic performance comes when the Irish National Accounts continue to show a high degree of unpredictability. Given the variability in key economic variables such as output, investment and the terms of trade it is particularly difficult to generate reliable and timely estimates of the output gap with the present set of National Accounts. The reasons for the variability are understood; in light of the ESA2010 accounting standards being

adopted, a small open economy such as Ireland's which depends on high levels of net inward multinational investment will see significant fluctuations in certain variables. While work has been underway to produce ancillary information such as the GNI* concept and related variables, a more ambitious exercise, which would see the preparation of two sets of National Accounts, is required. The aim would be to provide a parallel set of National Accounts where firms with large distortionary transactions are excluded. As a national priority, resources must be provided for this important work.

The new National Development Plan and the National Planning Framework may also pose challenges in terms of sustainable fiscal policy over the medium term. The plan outlines an ambitious €116 billion programme for investment of public capital over the coming years. The following strategic investment areas are prioritised: Housing and Sustainable Urban Development, rural development, environmentally sustainable public transport, airports and ports, water infrastructure, the road network, enterprise skills and innovation capacity, culture, sport and heritage, climate action and education, health and childcare.

While it is not the function of this *Commentary* to provide a robust review of the specificities of a very wide ranging capital plan, from a macro-economic perspective it is worth highlighting a number of points. The current rapid growth in the economy suggests the possibility of capacity constraints in the domestic economy over the coming years, particularly in the labour market. Within this context, it is prudent to ensure that every large public capital project is assessed in detail and is subject to critical and thorough cost-benefit appraisals: Jenkinson et al. (2018) outline a broad capacity and demand analysis for infrastructure developments.[13] Additionally, however, a continuing macroeconomic assessment of the impact of the plan on prices, wages and other channels would also be important.

Another issue of note on the public finances front is the sustainability or otherwise of the current level of corporation tax receipts. As noted in the public finances section, corporation taxes have been rising sharply over the last three years. In 2017, corporation taxes accounted for over 16 per cent of total taxation revenues of the State – the first time since 2003. While the strong growth rates in recent years undoubtedly reflect the improved corporate profitability including that of multinational firms operating in the Irish market, the increased concentration of the receipts amongst a relatively small number of companies does give rise to issues of sustainability. This concern is further compounded by recent taxation changes in the United States. In particular, under these reforms,

[13] Jenkinson, F., D. O'Callaghan, P. Reidy, F. Kane and S. Prior, 2017 'Strategic Public Infrastructure: Capacity and Demand Analysis', Staff Papers 2017, Irish Government Economic and Evaluation Service (IGEES).

valuable intellectual property assets principally held by US companies would be subject to tax treatment in the US initially; a move which would make it less attractive to locate these assets in Ireland. This change comes on top of proposals to reduce the US corporation tax rate from 35 to 20 per cent. Therefore, the present uncertainty concerning corporation taxes is another reason for discipline on the public finances front.

The past quarter has seen the launch of the new ESRI/Bank of Ireland Savings and Investment Index. Monteiro, O'Toole and Watson in a box in the *Commentary* provide an overview of the Index in terms of what it seeks to capture and some preliminary results. The Index tracks household attitudes towards savings and investment as well as monitoring their perspectives on the current and future savings and investment environment. Understanding savings behaviour provides insight into how households smooth consumption, plan to make big purchases and build up buffers which can be drawn down in times of economic stress. Monitoring household investment patterns gives an understanding of how they are putting their money to work, their financial diversification, and their appetite for risk. The Index also provides a Risk Barometer and a Retirement Optimism Index to give insight into household risk-taking and retirement planning. These will be presented on alternate months. Information from the Index along with the other indices assessing general market sentiment and housing sentiment produced by the Institute are increasingly useful in providing timely assessments of consumer intentions in the Irish economy.

Finally, the ongoing uncertainty concerning the UK Government's stance on remaining in the EU Customs Union is of particular relevance to the Irish economy. The implications for domestic consumer prices of new tariffs between the UK and Irish economy are examined in a Special Article to the *Commentary*. Lawless and Morgenroth examine the contribution of UK imports to overall household expenditure in Ireland and their exposure to tariffs and other cost increases from possible restrictions on trade. They estimate that the imposition of such tariffs could increase the annual cost of the typical consumption basket for the average household between €892 (increase in non-tariff trade costs) and €1,360 (tariffs plus other trade cost increases). Lawless and Morgenroth also find that households with lower income levels would face considerably higher percentage increases as they tend to consume a higher share of products that would be most affected by increases in tariffs and trade costs. Along with the estimated impact of a hard Brexit on Irish fiscal space in Garcia (2017), this represents another tangible example of how a hard Brexit would impact the domestic economy.

DETAILED FORECAST TABLES

FORECAST TABLE A1 EXPORTS OF GOODS AND SERVICES

	2016	% change in 2017		2017	% change in 2018		2018	% change in 2019		2019
	€ bn	Value	Volume	€ bn	Value	Volume	€ bn	Value	Volume	€ bn
Merchandise	194.1	0.9	2.9	195.8	4.1	3.1	203.9	5.9	3.3	215.8
Tourism	4.7	5.1	3.8	4.9	3.0	3.0	5.1	3.2	3.2	5.2
Other Services	136.3	13.8	13.3	155.1	14.2	13.4	177.1	14.4	13.5	202.7
Exports of Goods and Services	335.0	6.1	6.9	335.8	8.5	7.4	386.1	9.8	7.8	423.7
FISM Adjustment	0.0			-0.2			-0.2			-0.2
Adjusted Exports	335.0	6.1	6.94	335.6	8.5	7.4	385.9	9.8	7.8	423.5

FORECAST TABLE A2 INVESTMENT

	2016	% change in 2017		2017	% change in 2018		2018	% change in 2019		2019
	€ bn	Value	Volume	€ bn	Value	Volume	€ bn	Value	Volume	€ bn
Housing	6.5	26.4	16.0	8.2	10.4	20.2	9.0	7.8	20.3	9.7
Other Building	10.3	22.3	18.7	12.6	26.6	20.0	15.9	28.7	22.0	20.5
Transfer Costs	1.1	0.9	-1.1	1.1	9.2	3.0	1.2	9.2	3.0	1.4
Building and Construction	17.7	30.2	15.8	23.0	19.6	18.7	27.6	20.6	20.2	33.3
Machinery and Equipment	70.0	-33.6	-31.5	46.4	13.8	10.1	52.8	13.9	10.2	60.2
Total Investment	87.7	-20.8	-22.3	69.5	15.7	12.6	80.4	16.2	13.3	93.5

FORECAST TABLE A3 PERSONAL INCOME

	2016	% change in 2017		2017	% change in 2018		2018	% change in 2019		2019
	€ bn	%	€ bn	€ bn	%	€ bn	€ bn	%	€ bn	€ bn
Agriculture, etc.	3.2	2.0	0.1	3.3	2.5	0.1	3.4	1.4	0.0	3.4
Non-Agricultural Wages	80.3	5.2	4.2	84.4	5.3	4.5	88.9	5.4	4.8	93.7
Other Non-Agricultural Income	26.4	15.3	4.0	30.4	5.2	1.6	32.0	11.9	3.8	35.8
Total Income Received	109.9	7.5	8.3	118.1	5.2	6.1	124.3	7.0	8.7	132.9
Current Transfers	23.6	-1.5	-0.4	23.2	-6.7	-1.6	21.7	-2.4	-0.5	21.1
Gross Personal Income	133.4	5.9	7.9	141.3	3.2	4.6	145.9	5.6	8.1	154.1
Direct Personal Taxes	29.4	4.1	1.2	30.6	3.8	1.2	31.7	3.4	1.1	32.8
Personal Disposable Income	104.1	6.4	6.7	110.8	3.1	3.4	114.2	6.2	7.1	121.3
Consumption	96.6	3.2	3.1	99.7	3.4	3.4	103.1	3.5	3.6	106.8
Personal Savings	7.5	48.2	3.6	11.0	0.1	0.0	11.1	31.0	3.4	14.5
Savings Ratio	7.2			10.0			9.7			11.9
Average Personal Tax Rate	22.0			21.6			22.6			21.2

FORECAST TABLE A4 IMPORTS OF GOODS AND SERVICES

	2016	% change in 2017		2017	% change in 2018		2018	% change in 2019		2019
	€ bn	Value	Volume	€ bn	Value	Volume	€ bn	Value	Volume	€ bn
Merchandise	88.2	-7.2	-4.3	81.9	11.3	9.0	91.1	9.9	11.0	100.1
Tourism	5.6	4.3	2.8	5.9	4.5	3.0	6.1	5.6	4.0	6.5
Other Services	180.6	-4.3	-7.1	172.8	14.7	10.3	198.1	15.8	11.3	229.3
Imports of Goods and Services	274.4	-5.1	-6.2	260.5	13.4	9.7	295.4	13.7	11.0	335.9
FISM Adjustment	0.0			-0.4			-0.5			-0.5
Adjusted Imports	274.4	-4.9	-6.2	260.9	13.4	9.7	295.8	13.7	11.0	336.5

FORECAST TABLE A5 BALANCE OF PAYMENTS

	2016	2017	2018	2019
	€ bn	€ bn	€ bn	€ bn
Exports of Goods and Services	335.0	355.6	385.8	423.5
Imports of Goods and Services	274.4	260.5	295.4	335.9
Net Factor Payments	-47.6	-53.8	-56.5	-58.7
Net Transfers	-3.8	-4.3	-4.8	-5.3
Balance on Current Account	9.2	37.1	29.4	23.7
As a % of GNP	4.1	15.4	11.7	9.0

FORECAST TABLE A6 EMPLOYMENT AND UNEMPLOYMENT, ANNUAL AVERAGE

	2016	2017	2018	2019
	'000	'000	'000	'000
Agriculture	113.3	110.6	114.7	114.7
Industry	394.7	411.6	427.0	437.8
Of which: Construction	118.9	128.4	140.1	148.3
Services	1,618.2	1,664.9	1,712.0	1,745.4
Total at Work	2,133.3	2,194.5	2,253.7	2,298.0
Unemployed	194.8	157.8	128.5	107.6
Labour Force	2,327.9	2,353.3	2,382.2	2,405.6
Unemployment Rate, %	8.4	6.7	5.4	4.5

Special Article

BREXIT AND IRISH CONSUMERS[1]

Martina Lawless and Edgar Morgenroth*

ABSTRACT

Concerns about the impact of Brexit on the Irish economy have tended to focus on the challenges to exporting firms. However, as the UK is a significant source of imports into the Irish economy and there is considerable integration of the retail sectors in both countries, the imposition of tariffs or other increases in trading costs could pass through to increased prices for Irish consumers. This paper examines the contribution of UK imports to overall household expenditure in Ireland and their exposure to tariffs and other cost increases from possible restrictions on trade. Our approach generates an estimate of potential increases in the level of CPI of between 2 per cent and 3.1 per cent. In the estimated scenarios, these increases are the equivalent of between €892 (increase in non-tariff trade costs) and €1,360 (tariffs plus other trade cost increases) in the annual cost of its consumption basket for the average household. This assumes that there is no switching or changes in expenditure patterns in response to the cost increases so gives an upper bound to the cost increase effects. We also find that these effects are very unevenly distributed across households. Households with lower income levels would face considerably higher percentage increases as they tend to consume a higher share of products that would be most affected by increases in tariffs and trade costs.

INTRODUCTION

Since the decision of the UK government to leave the EU there has been significant evidence put forward that the potential introduction of trade barriers could impact negatively on Irish exporters and on the Irish economy overall. One further channel through which Brexit could impact on Ireland that has received less attention so far is though price increases on imports. The UK is a significant source of imports into the Irish economy with 28 per cent of Irish goods imports originating in the UK in 2016 as compared to the UK accounting for 14.6 per cent of Irish goods exports. Irish consumers and Irish firms could therefore face significant price increases in the event of tariffs being applied to these products.

1 This work was funded by the Competition and Consumer Protection Commission and we would like to thank John Shine and Geoffrey Grey for their helpful comments.

* Dr Edgar Morgenroth is Professor of Economics at Dublin City University Business School. This report was completed while he was an Associate Research Professor at the Economic and Social Research Institute and an Adjunct Professor at Trinity College Dublin.

The potential effect of Brexit on consumer prices was highlighted in the early scoping study prior to the referendum undertaken by Barrett et al. (2015). This raised a concern about the high level of Irish imports sourced in the UK and that the integrated nature of retail sectors could result in the exposure of households to increased prices and, also on a wider scale, that this could have a negative impact on the competitiveness of the Irish economy and raise prices for consumers.

Brexit may impact on consumer prices through a number of channels. Firstly, Brexit has already impacted significantly on the Sterling/Euro exchange rate and these changes have an impact on import prices and consumer prices. A large literature has considered the degree to which exchange rate changes pass through to prices. This has found that exchange rate changes are typically not completely passed through to prices and depends on the market structure (see Auer and Schoenle, 2016). For Ireland, Morgenroth (2000) showed that while exchange rate volatility has a negative effect on Irish exports to the UK in the short-run, the long-run impact is zero. More recent evidence by Reddan and Rice (2017) found that only 10 per cent of the exchange rate change is passed through to consumer prices in Ireland.

Secondly, if Brexit results in increased trade barriers between the UK and the EU then this is likely to reduce competition in the Irish market from abroad, and lower competition allows local firms to charge higher prices. Research has indeed shown that tariffs lead to higher prices being charged by local firms (Konings and Vandenbusche, 2005).

Thirdly, trade barriers such as tariffs raise the cost of traded products, which may be passed through to the consumer in higher retail prices. Surprisingly, the literature on the direct effect of trade barriers on consumer prices is quite limited. Blonigen and Haynes (2002) found that antidumping duties, that is tariff duties designed to prevent the importation of goods at prices likely to damage domestic firms, are more than fully passed through. One recent related paper by Hwang (2016) on South Korea examined tariff reductions in the aftermath of joining the World Trade Organisation (WTO), and found that how price falls in this case were passed on to consumers was determined strongly by the level of competition within the retail sector and within product categories. Similar results were obtained by De Loecker et al. (2016) who found that some of the benefits of lower tariffs were absorbed by firms through higher mark-ups. It is likely that the level of competition and availability of substitutes would also be significant factors in how price increases would be passed onto consumers. A recent paper by Clarke et al. (2017) analysed the potential effect of Brexit on consumer prices in the UK. They found that the imposition of tariffs under a scenario where trade between the UK and the EU is subject to WTO tariffs would increase the average

cost of living in the UK by 1 per cent. Their analysis also showed that the impact differs across households with the unemployed, families with children and pensioners being most affected.

This paper focuses on the consumer side of Brexit by looking at the contribution of UK imports to overall household expenditure in Ireland and how exposed this might be to tariffs or other related cost increases. The key question posed is to quantify how substantial this effect might be and how it could vary across households. We do this by combining data on trade, tariffs and other costs that could increase in the event of the UK exit from the EU and comparing this to Irish household expenditure.

Our approach generates an estimate of potential increases in the level of Consumer Price Index (CPI) of between 2 per cent and 3.1 per cent. These increases are the equivalent of between €892 (increase in non-tariff trade costs) and €1,360 (tariffs plus other trade cost increases) in the annual cost of its consumption basket for the average household. This increase is calculated in the absence of any change in consumer behaviour away from these products. While some expenditure shifts would be expected in response to prices changes, the extent to which households adjust depends in large part on the range of substitutes available and their prices. We do not model the dynamics of that response, keeping the focus of the paper on measuring the size of the initial price shift to which Irish consumers could potentially be exposed. The estimated effects in terms of the increase in the household basket could therefore be regarded as upper bounds of the household impact. We also make no assumption regarding further exchange rate movements which could offset or amplify the effects.

Of possibly more concern than the size of this average impact is that these effects are very unevenly distributed across households. We show that households with lower income levels consume a higher share of products that would be most affected by increases in tariffs and trade cost and the overall effect is inversely related to the household income decile.

DATA SOURCES

In order to answer the question of how Brexit might impact on Irish CPI we combine data from a number of different sources – on trade flows, tariffs, non-tariff barriers and household expenditure. This section describes each source in turn and the assumptions that underlie the subsequent analysis.

Trade data

The first source is trade data from the customs records collected by the Central Statistics Office which we used to examine at a product-by-product level what Ireland imports from the UK. These data are collected at the 6-digit product level as defined by the international Harmonized System (HS). We also look at total Irish imports for each product in order to generate the UK share of total imports.

Tariff data

The second source of data relates to our estimates of how significant price increases could be in the introduction of tariffs. The assumption made is that in the absence of a trade deal or transitional arrangement, the EU's register of 'most favoured nation' tariffs listed with the WTO would be the fall-back position, either come March 2019 or at the end of a transition period. The uncertainty of both the final arrangements and their timing need to be borne in mind throughout the discussion of the following scenarios. The WTO schedule that we use as our baseline scenario are the tariffs applied by the EU to all external countries without a trade agreement and are therefore the highest level of tariffs that would be likely to apply, as any specific deal would be to lower tariffs on some if not all product lines. The WTO tariffs vary widely across products with many subject to a zero tariff while some products are subject to a tariff as high as 80 per cent (for some beef products). Tariffs can be applied in two different ways – most of the WTO tariff rates are ad-valorem tariffs (i.e. charged as a percentage of the value of the goods being shipped) while others are applied as a charge per unit quantity or by weight. In some instances, the two methods are combined, as for example in the case of the tariff on fresh or chilled boneless bovine meat which is 12.8 per cent of the value of the product plus €303 per 100 kg (Lawless and Morgenroth, 2016). This implies that the aggregate impact of Brexit under a WTO scenario is a function of the detailed trade patterns and considerable variation in the impacts across countries, sectors, firms and households are possible. So far, the focus has been largely on the cross-country impacts with a focus on exporting firms with limited focus on how households might be exposed to changes in the trading environment.

Non-tariff barriers

As well as tariffs, potential increases in prices could be passed on to consumers arising from cost increases if additional customs procedures or other barriers to trade are applied. It is important to stress that many of these non-tariff barriers could come into place even in the event of a deal reducing tariffs considerably from their WTO levels, particularly if the UK exits the Customs Union. For this reason, we treat non-tariff barriers as our lower-bound estimate and an outcome combining WTO tariffs plus non-tariff barriers as our upper estimate. As it is difficult to envisage the imposition of tariffs without any degree of non-tariff

barriers (even in basic administration costs) being incurred, we present calculations based on either non-tariff barriers alone or based on a combination of non-tariff barriers and tariffs. In order to estimate the non-tariff barrier effects, we take data from the estimates generated by the World Bank by Kee et al. (2009) and described in IntertradeIreland (2017). 'Non-tariff barriers' is the term applied to a wide range of policy measures other than tariffs that restrict or discourage international trade flows. Some examples of non-tariff barriers on goods trade can include quantity limits, subsidies to domestic production and implicit barriers arising from technical requirements such as licensing, labelling, standards and sanitary and phyto-sanitary rules (rules designed to protect health and food safety). Non-tariff barriers also include administrative requirements that add cost or delays to imports such as customs inspections and documentation.

Given their variety and complexity, non-tariff barriers can be difficult to measure. Research carried out by Kee et al. (2009) on behalf of the World Bank combine a wide range of non-tariff barriers at a detailed product level and convert them to an ad-valorem tariff (or price) equivalent. Their work provides estimates for 4,575 HS six-digit product categories which we match to the trade flow data from the CSO. Their central estimate for all non-tariff barriers is equivalent to applying a 12 per cent tariff. However, the tariff equivalent on some products can be many times this average effect. In over half of the products where non-tariff barriers are in effect, they find that the price effect of the non-tariff barrier is higher than the tariff.

Looking at the pattern of non-tariff barriers across countries, Kee et al. (2009) show that richer countries tend to impose lower barriers on trade. On this basis, we assume that any potential non-tariff barriers between the EU and UK would be one-quarter of those estimated by Kee et al. (2009) given that the EU and UK will be starting from a point of completely harmonised regulatory and safety standards. This is in line with the approach taken by Dhingra et al. (2016) when estimating the effect on the UK economy of the UK exiting the EU. They use non-tariff barrier estimates of EU-US trade but assume that the level that would apply to EU-UK trade would be between one-quarter (in their optimistic scenario) and three-quarters (in their pessimistic scenario) of the US level.

Non-tariff barriers have moved to the forefront of a number of recent major trade negotiations. For example, the Comprehensive Economic and Trade Agreement (CETA)[2] between the EU and Canada removes almost all tariffs on goods between the signatories with a small number of exceptions in agricultural products bringing it extremely close to complete free trade. The bulk of the CETA

2 http://ec.europa.eu/trade/policy/in-focus/ceta/ceta-chapter-by-chapter.

text revolves around the removal or reduction of non-tariff barriers in both goods and services, highlighting that these are considered significant impediments to trade.

A further issue to be borne in mind in terms of non-tariff barriers affecting Irish retail prices is the extent to which imports from other countries to Ireland are transhipped through the UK. Comparing trade and transport data sources, Lawless and Morgenroth (2017) estimate that approximately 11 per cent of Irish import volumes from markets other than the UK are transported across the UK 'land-bridge'. Although no tariffs would be imposed on these imports post-Brexit as they do not originate in the UK, there is the possibility that increased administration costs (e.g. to verify that the goods are destined for Ireland and not for the UK domestic market) and associated port delays could have a knock-on effect of increasing the cost of delivering those products to Ireland.

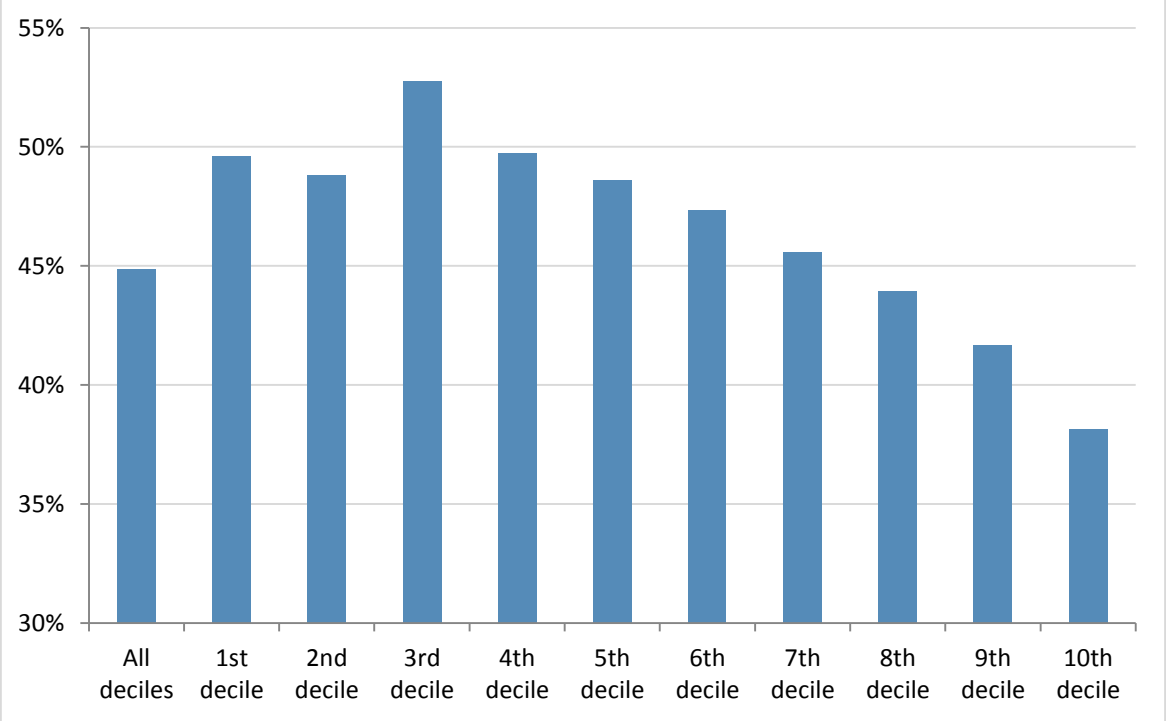
Household expenditure data

The level of current trade from the UK to Ireland and associated potential price increases are then combined with measures of how important these products are in the consumption expenditure baskets of households in order to gauge how this might affect different households and overall CPI. The data for this come from the Household Budget Survey (HBS) collected by the CSO in 2015-2016. The HBS is a large scale survey (over 6,800 households) that collects information on household expenditure patterns in order to appropriately weight price changes by their importance in household consumption for the Consumer Price Index. It provides very detailed information on expenditure at a product level, by households overall and also by income decile. We use the overall expenditure shares to generate our CPI aggregate estimate and provide additional evidence on the distributional differences of these trade related price increases across different household income groups (specifically we divide households into ten groups – deciles – based on their income levels).

The first item of note in gauging household exposure to tariff related price increases is that the share of goods in the household basket declines considerably as household income increases. Households in higher income deciles tend to spend relatively more on services and are therefore somewhat less exposed to increases in good prices as is shown in Figure 1. On average across all households, approximately 45 per cent of expenditure is on goods and the other 55 per cent is on services (with housing being the single largest component). This share of goods in total expenditure ranges from 53 per cent in the third decile to just 35 per cent in the highest income group.

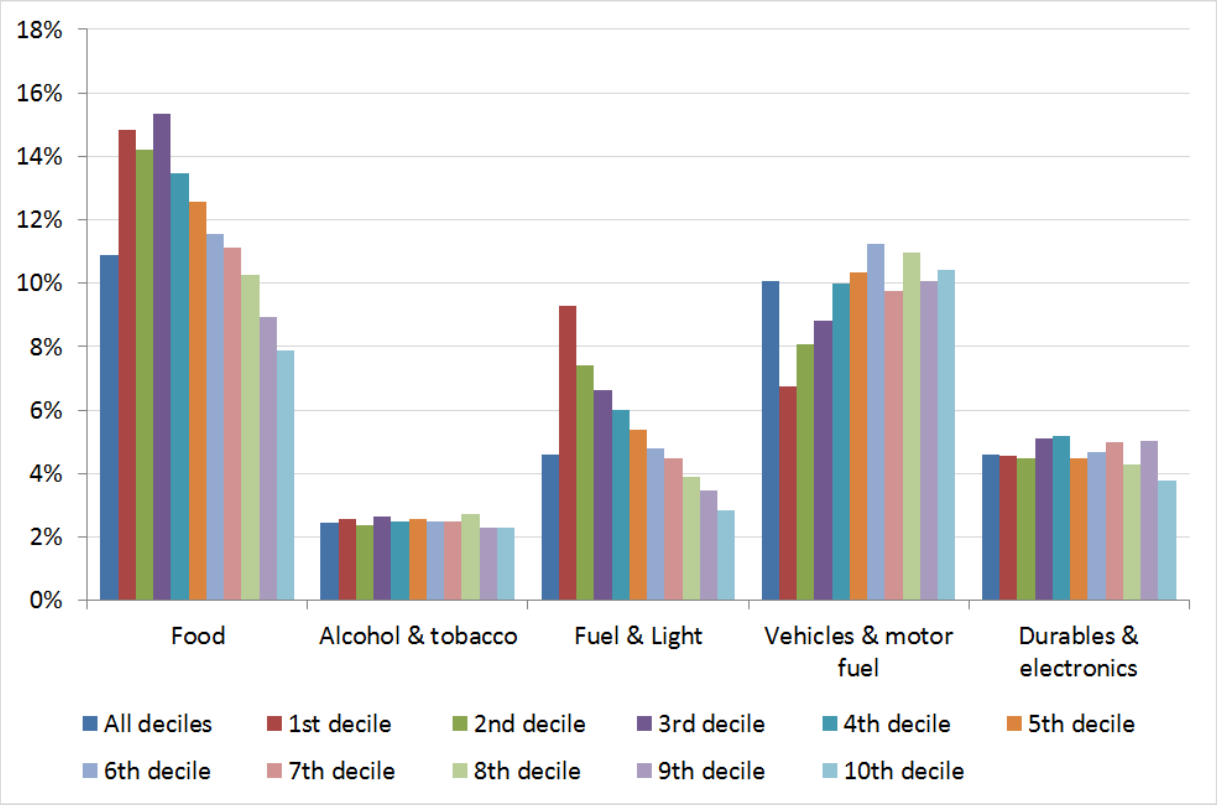
We choose a number of specific examples of products where expenditure shares across household deciles differ and show these in Figure 2. We particularly note that the share of household expenditure on food declines considerably as household income increases. The poorest household groups allocate up to 15 per cent of their total expenditure to food and this declines to just 8 per cent for the highest income group. This is an important determinant of our overall results as food products have the highest tariff listings in the EU's WTO tariff schedule and this therefore gives an early indication of how the distribution of post-Brexit tariffs could differ in their impact across household types. Other expenditure areas where we find considerable household income variation, such as the lowest income households spending a much higher fraction of their total expenditure on fuel and light (9 per cent compared to 3 per cent in higher income households), will be less affected by Brexit as tariffs in these product areas tend to be low. Working in the opposite direction, higher income households tend to spend somewhat more on vehicles and motor fuels. The share of spending in other areas such as alcohol and electronics are flatter over the income distribution.

FIGURE 1 SHARE OF GOODS IN HOUSEHOLD EXPENDITURE BY INCOME DECILE



Source: Authors' calculations from Household Budget Survey, 2015-2016.

FIGURE 2 VARIATION IN EXPENDITURE SHARES BY INCOME DECILE



Source: Authors' calculations from Household Budget Survey, 2015-2016.

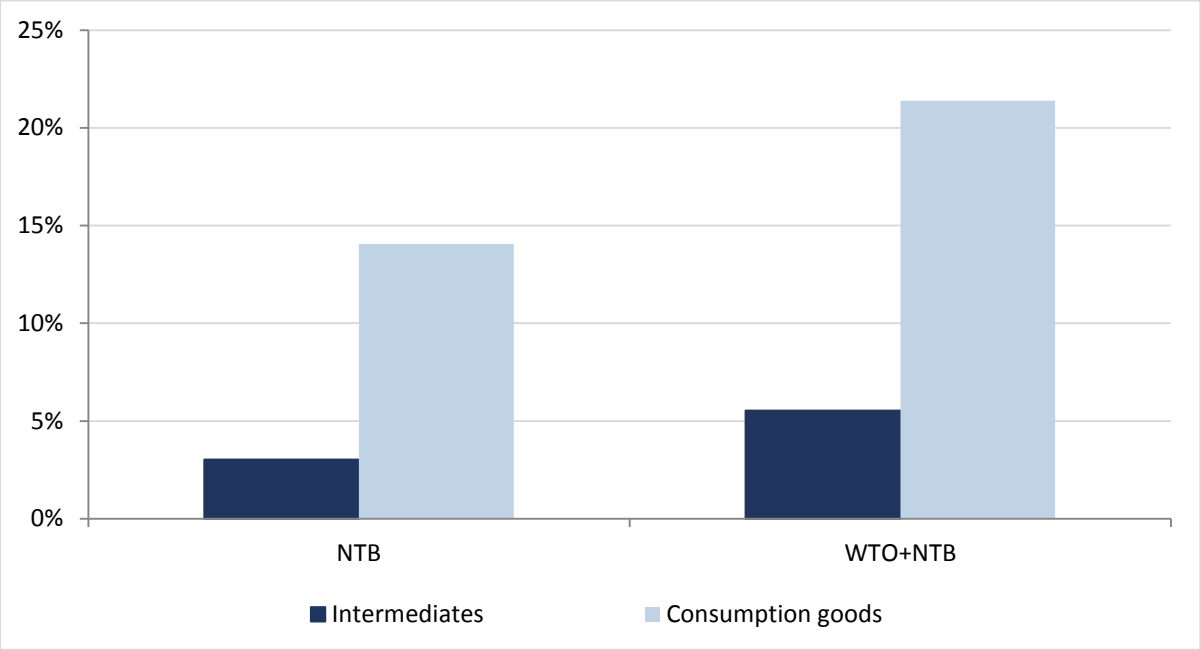
ESTIMATION METHODOLOGY

In order to estimate how increased import costs might affect prices of consumer goods we combine the data sources described above in a number of different steps. The first of these is to match the WTO tariffs and product level estimates of the potential cost increases associated with non-tariff barriers to the imports from the UK and calculate the corresponding price effect. This gives a range of price increases at a product-by-product level.

These products then need to be distinguished between intermediate and capital goods that would be primarily used by firms, and consumption goods used by households. Our method of doing this was to match the product codes used in the trade data (HS codes) to those used in the Household Budget (COICOP codes). In order to line up the two different systems, the trade codes were first converted into an intermediate classification called the Common Product Classification (CBC) and then converted again into the COICOP classification using concordances from the UN. This procedure gives us a matching between the imports and products reported as being purchased by households.

In order to allocate the price increases we make an assumption that any product listed in the HBS is purchased entirely by households. This will give an upper estimate as many of the products reported in the trade data (for example tea, coffee and laptop computers) will also be purchased by firms. However, although this may overestimate the direct effect of price increases faced by the consumer, the indirect effect should also be considered as increased costs for inputs used by Irish firms may also in many cases be passed on to the final consumer.

FIGURE 3 CONSUMPTION AND INTERMEDIATE GOOD TARIFF AND NTB EXPOSURES



Source: Authors' calculations from CSO trade data, WTO tariff rates and non-tariff barriers (Kee et al., 2009).

Figure 3 shows how the tariff and non-tariff barrier cost increases vary across consumer and intermediate (all non-consumer) products. The non-tariff barrier (NTB) estimated price increases are over four times greater for consumption products than for non-consumption goods. Combining the non-tariff barriers with the WTO-registered tariffs generates a total price increase exposure of 5.5 per cent on UK imports of non-consumption goods and an increase of up to 21 per cent for consumption goods.[3]

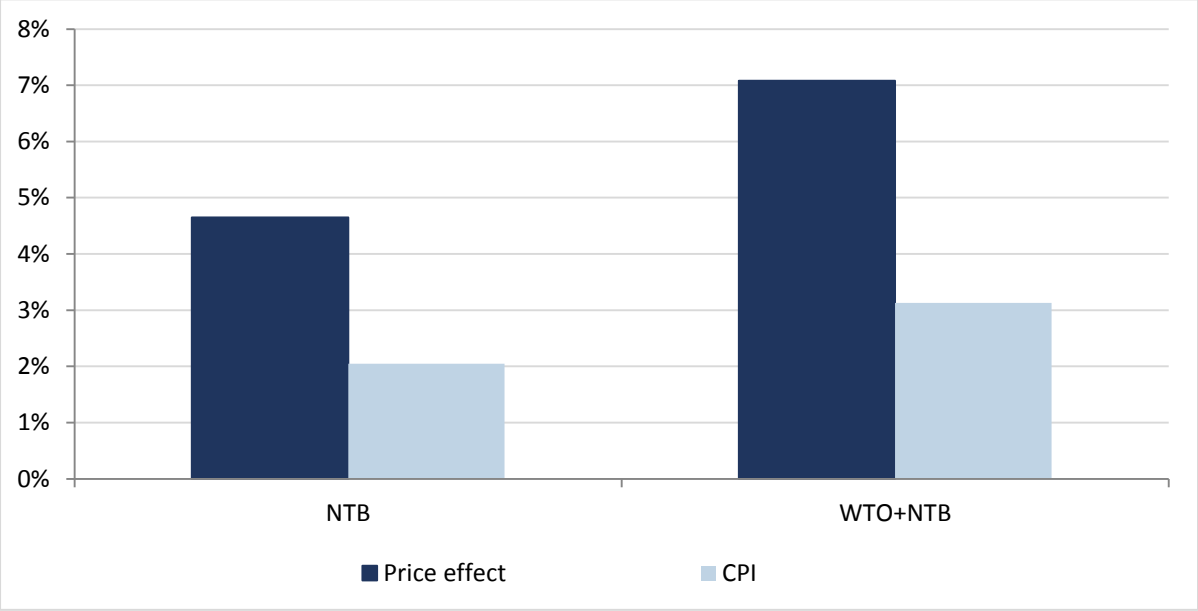
The next step of the methodology is to estimate how important the UK imports are in overall household spending for each product. To do this we calculate imports from the UK as a proportion of the total purchase of those goods by the households. However, as already mentioned some of the imported products,

[3] The WTO tariff impact alone on intermediates is 2.5 per cent whereas the tariff impact on consumption products is over 7 per cent.

even though classified here as consumption products, may also be purchased by firms. To minimise any overestimate of household exposure, we also compare the UK import share to total imports in each product category and use the lower of the two if there is any discrepancy. For example, when expressed as a share of household expenditure, imports of tea and coffee from the UK exceeded 100 per cent so this was replaced by the UK share of total imports in this product category which was 54 per cent.

We now have an importance weight on each product for the UK share of each product. Figure 4 shows how the overall price increase for goods is generated by aggregating across all products, weighted by the share of these products imported from the UK. The price effect bars show how this scales down the overall tariff impacts shown in Figure 3, as they are now multiplied by the market share of the UK imports to give an overall impact on the price levels of these goods in the Irish economy. The CPI bars then show how these price increases translate into an overall CPI effect by further weighting the products by their importance in the household expenditure basket.

FIGURE 4 PRICE INCREASES AND AGGREGATE CPI EFFECT



Source: Authors' calculations from CSO trade data, Household Budget Survey, WTO tariff rates and non-tariff barriers (Kee et al., 2009).

The tables in the Appendix give more detail on this by showing for each sector the tariff or non-tariff barrier increase in the cost of imports from the UK, the share of the UK in total expenditure and the combination to give the overall implied price effect. To take the example of bread and cereals, Table A.1 shows that the estimated tariff equivalent of non-tariff barriers on these products is 36 per cent. Imports from the UK are equivalent to 59 per cent of Irish household

expenditure in this product category so the impact on the total sector price of tariffs on the UK imports would be 21 per cent (36 per cent times 59 per cent). The concentration of the highest non-tariff barriers on food products is evident in Table A.1 with meat imports facing a 62 per cent tariff equivalent and milk, cheese and eggs facing a 43 per cent tariff equivalent. Table A.2 shows the combined non-tariff barrier estimates and Table A.3 the direct effect of tariffs alone.

The tariff schedule shows that food and clothing tariffs are generally well in excess of 10 per cent while those on other manufactured products are relatively modest – zero rates on medical products and motor fuels, 1 per cent on electronics and 3 per cent on household appliances for example. Of manufactured products, only motor vehicles (cars, motorcycles and parts) face significant tariff rates at approximately 8 per cent.[4] As discussed earlier, the method we followed was to apply tariffs and non-tariff barriers at the most disaggregated level possible and it should be noted that the rates summarised for the broad categories in the tables do mask some substantial variations even within the same category – meat tariffs for example range from approximately 10 per cent on chicken to over 80 per cent on some beef products.

The overall impact on Irish price levels of changes in trade costs on imports from the UK will also crucially depend on how important the UK is as a source of that product. Given the integration of retail and grocery markets, it is perhaps not surprising to see in Table A.1 that the UK is the origin of a substantial share of many products – most particularly in fresh and processed foods but also in household and personal non-durables (categories which include cleaning products and toiletries for example). It should be emphasised again at this point that such price increases on particular products would be likely to result in some changes in consumer choices being made but it is not possible to gauge in advance how large these would be without more detailed information on substitutes available and levels of competition in different product areas.

The cross-product detail on non-tariff barriers in Table A.1 (and the combined effects of tariffs and non-tariff barriers in Table A.2) also shows a sharp difference between the impacts on food and manufactured products. They suggest in fact that even in the event of a trade deal that removes tariffs entirely, there may be a significant price impact on Irish consumers unless such a deal also minimises non-tariff barriers.

4 The trade data do not distinguish between new and second-hand cars.

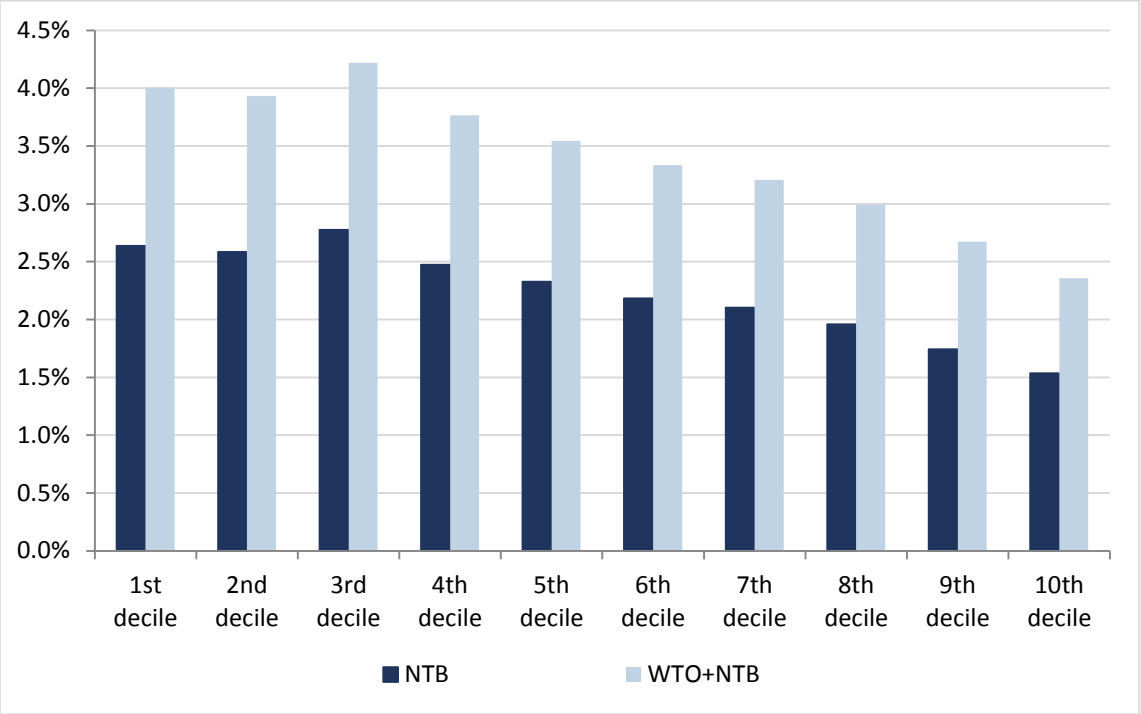
The final step is to translate these product level price changes into an overall CPI impact which is done by aggregating over all the price increases for each product and weighting them by the importance of that product in household consumption. This generates an estimate of potential increases in the level of CPI of between 2 per cent in the non-tariff barriers scenario and 3.1 per cent when both tariffs and non-tariff barriers are applied. These increases are the equivalent of between €892 and €1,360 in the annual cost of its consumption basket for the average household. The relatively larger impact of the non-tariff barrier costs compared to the tariffs is noteworthy although it should be emphasised that the international estimates used to proxy these costs are likely to be less accurate than the tariff estimates which come directly from the EU schedule published with the WTO.

It should further be stressed that the CPI increase calculated here does not take account of any change in consumer behaviour in reaction to price increases, which is beyond the scope of the present exercise. The extent to which households adjust depends in large part on the range of substitutes available, ease of switching both for consumers and for retailer supply chains and the prices, which could also be affected by exchange rate movements (which to date have made UK imports more competitive). We do not model the dynamics of that response, keeping the focus of the paper on measuring the size of the price shift to which Irish consumers could potentially be exposed.

The Household Budget Survey also provides detail on the expenditure patterns of different types of households. Dividing households into ten equally sized groups based on their income in Figure 5 shows that our estimated impact of post-Brexit cost increases has a substantial distributional effect. Households in the lowest income decile face increases of around 70 per cent higher than those in the highest income group. Households in the lowest income group would face a 4 per cent increase in prices in the event of both tariffs and non-tariff barrier obstacles being implemented. Table 1 converts the percentage increases into monetary amounts based on the annual average expenditure of each household income group. The 4 per cent increase for the lowest income households is equivalent to a €634 annual increase in cost of their current expenditure basket for these households, or €12 extra on their current weekly spending of €305. The percentage change effects are similar for the bottom three groups and then taper off gradually as household income increases. These generate higher monetary amounts however as spending levels are also going up. The 4.2 per cent increase for the third income group is equivalent to extra costs of €1,104 and the 3.8 per cent increase for the fourth group is an increase of €1,191. For the highest income households, the effects in the worst-case scenario would be 2.4 per cent. This is equivalent to an increased cost of their spending basket of €2,086 per

year. The difference in percentage impact is largely due to the higher share of household expenditure accounted for by food by lower income households.

FIGURE 5 VARIATION ACROSS HOUSEHOLD INCOME DECILES



Source: Authors' calculations from CSO trade data, Household Budget Survey, WTO tariff rates and non-tariff barriers (Kee et al., 2009).

TABLE 1 INCREASE IN BASKET COST BY INCOME DECILE

	Non-tariff barriers €	Tariffs + NTB €
1st decile	419	634
2nd decile	531	809
3rd decile	727	1,104
4th decile	780	1,191
5th decile	849	1,294
6th decile	933	1,425
7th decile	1,013	1,549
8th decile	1,130	1,724
9th decile	1,181	1,812
10th decile	1,361	2,086

Source: Authors' calculations from CSO trade data, Household Budget Survey, WTO tariff rates and non-tariff barriers (Kee et al., 2009).

CONCLUSIONS

This paper combines trade, tariffs and non-tariff barrier costs to estimate scenarios for the potential impact of Brexit on Irish imports. We examine how these trade changes could impact on households by linking the importance of

each of the traded products to consumption expenditure baskets of households collected by the Household Budget Survey. In estimating exposure to trade policy changes, a number of characteristics of different household income levels play an important role. Firstly, the share of goods in the household basket declines considerably as household income increases, with households in higher income deciles spending 35 per cent of their income on goods compared to 53 per cent in the third decile. Secondly, looking at specific categories of goods, we find that the share of household expenditure on food declines considerably as household income increases. This is an important determinant of our overall results as food products have the highest tariff listings in the EU's WTO tariff schedule, which we assume would be the fall-back position in the absence of a trade deal or transition agreement by the Brexit deadline of March 2019.

Comparing tariff and non-tariff barrier cost increases across consumer and intermediate inputs shows consumer goods to be considerably more exposed to changes in trade regime. The WTO tariff impact on products used as intermediate inputs for further processing is 2.5 per cent whereas the impact on consumption products is over 7 per cent. A similar pattern applies to estimates of non-tariff barriers which also fall disproportionately heavily on final consumption products, most notably food.

Aggregating over the individual price increases for each product and weighting them by the importance of that product in household consumption gives us an estimate of potential increases in the level of CPI. Our estimate impacts range from 2 per cent in the non-tariff barrier scenario to an impact of 3.1 per cent when both tariffs and non-tariff barriers are applied. These increases are the equivalent of between €892 and €1,360 in the annual cost of its consumption basket for the average household. This assumes no change in consumer spending patterns as we try here to focus on the change in prices faced by households at the point of the imposition of a new trade regime. Given the size of the possible increases for some product categories, some change in consumer behaviour away from these products would be likely although we do not model this explicitly. The extent of switching would depend on a number of factors such as the range of substitutes available and their prices. In some instances, the effect could be of a reduction in the number of varieties on offer in certain product groups if the price increases considerably.

We also find that the potential post-Brexit cost increases could have a substantial distributional effect. Households in the lowest income decile face increases of around 70 per cent higher than those in the highest income group. Households in the lowest income group would face a 4 per cent increase in prices in the event of both tariffs and non-tariff barrier obstacles being implemented compared to 2.4

per cent for the highest income group. This is largely due to the higher share of household expenditure accounted for by food by lower income households.

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APPENDIX

TABLE A.1 NTB ESTIMATES

	NTB tariff equivalent %	UK import share %	Implied price increase %
Bread and cereals	36	59	21
Meat	62	24	15
Fish and seafood	20	57	11
Milk, cheese and eggs	79	38	30
Oils and fats	46	27	13
Fruit	25	14	3
Vegetables	27	14	4
Sugar, jam, chocolate and confectionery	55	32	18
Processed foods	27	44	12
Coffee, tea and cocoa	29	54	16
Mineral waters, soft drinks, juices	27	56	15
Spirits	9	27	2
Wine	14	3	0
Beer	6	8	0
Tobacco	53	3	1
Garments and clothing accessories	18	22	4
Shoes and other footwear	24	13	3
Household maintenance and repair goods	4	5	0
Fuel and light	0	21	0
Electronic, photographic and IT	1	18	0
Household non-durable goods	5	46	2
Personal non-durable goods	1	68	1
Furniture	8	36	3
Household appliances and tools	3	38	1
Reading material and stationery	1	27	0
Vehicles	8	11	1
Motor fuel	0	42	0
Medical and therapeutic products	0	11	0
Jewellery and watches	4	36	1
Toys and games	10	31	3

Source: Authors' calculations from CSO trade data, Household Budget Survey and non-tariff barriers (Kee et al, 2009).

TABLE A.2 WTO TARIFFS + NTB ESTIMATES

	Combined tariff equiv. %	UK import share %	Implied price increase %
Bread and cereals	52	59	30
Meat	100	24	24
Fish and seafood	30	57	17
Milk, cheese and eggs	122	38	46
Oils and fats	69	27	19
Fruit	34	14	5
Vegetables	36	14	5
Sugar, jam, chocolate and confectionery	84	32	27
Processed foods	34	44	15
Coffee, tea and cocoa	37	54	20
Mineral waters, soft drinks, juices	40	56	23
Spirits	16	27	4
Wine	22	3	1
Beer	7	8	1
Tobacco	91	3	2
Garments and clothing accessories	30	22	6
Shoes and other footwear	35	13	5
Household maintenance and repair goods	7	5	0
Fuel and light	0	21	0
Electronic, photographic and IT	2	18	0
Household non-durable goods	9	46	4
Personal non-durable goods	2	68	1
Furniture	12	36	4
Household appliances and tools	6	38	2
Reading material and stationery	3	27	1
Vehicles	16	11	2
Motor fuel	0	42	0
Medical and therapeutic products	0	11	0
Jewellery and watches	7	36	3
Toys and games	14	31	4

Source: Authors' calculations from CSO trade data, Household Budget Survey, WTO tariff rates and non-tariff barriers (Kee et al, 2009).

TABLE A.3 WTO TARIFFS

	WTO tariff rate %	UK import share %	Implied price increase %
Bread and cereals	16	59	9
Meat	38	24	9
Fish and seafood	10	57	6
Milk, cheese and eggs	43	38	16
Oils and fats	23	27	6
Fruit	9	14	1
Vegetables	9	14	1
Sugar, jam, chocolate and confectionery	29	32	9
Processed foods	8	44	3
Coffee, tea and cocoa	7	54	4
Mineral waters, soft drinks, juices	13	56	7
Spirits	7	27	2
Wine	8	3	0
Beer	0	8	0
Tobacco	38	3	1
Garments and clothing accessories	11	22	2
Shoes and other footwear	10	13	1
Household maintenance and repair goods	3	5	0
Fuel and light	0	21	0
Electronic, photographic and IT	1	18	0
Household non-durable goods	4	46	2
Personal non-durable goods	1	68	0
Furniture	4	36	2
Household appliances and tools	3	38	1
Reading material and stationery	1	27	0
Vehicles	8	11	1
Motor fuel	0	42	0
Medical and therapeutic products	0	11	0
Jewellery and watches	4	36	1
Toys and games	4	31	1

Source: Authors' calculations from CSO trade data, Household Budget Survey and WTO tariff rates.

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